

Choose ?

1. The includes four successive displacements.
☐ A Amplitude ☐ B half oscillation ☐ C Wavelength ☐ D Complete oscillation
2. If the frequency of an oscillating body is 100 Hz, so the periodic time is seconds.
☐ A 100 ☐ B 0.01 ☐ C 0.1 ☐ D 1×10^2
3. The time taken by the oscillating body to make one complete oscillation is
☐ A Amplitude ☐ B Frequency ☐ C Periodic time ☐ D Velocity
4. The of an oscillating body is maximum at its rest position.
☐ A displacement ☐ B Velocity ☐ C Potential energy ☐ D Amplitude
5. is the reciprocal of the periodic time.
☐ A Velocity ☐ B Wavelength ☐ C Frequency ☐ D Amplitude
6. The motion of isn't from periodic motion.
☐ A Rotary bee ☐ B Pendulum ☐ C Tuning fork ☐ D Train
7. The motion of is from the oscillation motion.
☐ A Water waves ☐ B Train ☐ C Rotary bee ☐ D Clock pendulum
8. The measuring unit of the wave frequency is
☐ A nm. ☐ B m. ☐ C cm. ☐ D sec.⁻¹
9. If the periodic time of a tuning fork is 4 sec, so the frequency is Hertz.
☐ A 4 ☐ B 6 ☐ C $\frac{1}{4}$ ☐ D $\frac{1}{6}$
10. The sound waves are waves.
☐ A Longitudinal ☐ B Transverse ☐ C Electromagneti ☐ D Radio
11. The double of the distance between a crest and a trough in transverse wave, is called
☐ A Frequency ☐ B Amplitude ☐ C Wavelength ☐ D Wave velocity
12. If a wave frequency is 5 Hz, so the product of multiplying its frequency and its periodic time is
☐ A 1 ☐ B 5 ☐ C 10 ☐ D $\frac{1}{5}$



13. Sound velocity is the greatest through

- ☐ A Vacuum ☐ B Solids ☐ C Gases ☐ D Liquids

14. When the wave frequency is doubled and its wavelength is decreased to half, the velocity

- ☐ A Decreases ☐ B Increases ☐ C Is doubled ☐ D Stays constant

15. Is the distance covered by a wave in one second.

- ☐ A wavelength ☐ B Frequency ☐ C Wave velocity ☐ D Periodic time

16. If the distance between second and fourth compressions is 20 cm, so the wavelength is

- ☐ A 40 cm ☐ B 10 cm ☐ C 5 cm ☐ D 2.5 cm

17. Cycle/sec. is the measuring unit if the of an oscillating body.

- ☐ A Amplitude ☐ B Frequency ☐ C Periodic time ☐ D Velocity

18. The amplitude of an oscillating body is measured in

- ☐ A Metre ☐ B Hertz ☐ C Second ☐ D GigaHertz

19. The motion of the is a transitional motion.

- ☐ A Pendulum ☐ B Train ☐ C Tuning fork ☐ D Stretched string

20. The periodic time of an oscillating body makes 240 complete oscillations in 2 mins, is

- ☐ A 0.5 sec ☐ B 2 sec ☐ C 120 sec ☐ D 0.2 sec

21. is the number of complete oscillations produced by an oscillating body.

- ☐ A Periodic time ☐ B Amplitude ☐ C Frequency ☐ D Velocity

22. Is the measuring units of wave velocity.

- ☐ A Hertz ☐ B Sec. ☐ C m/sec ☐ D m/sec^2

23. Is the highest point of the medium particles in the transverse wave.

- ☐ A Trough ☐ B Crest ☐ C Compression ☐ D Rarefaction

24. The crest in transverse wave is equivalent to the in longitudinal wave.

- ☐ A trough ☐ B Compression ☐ C Rarefaction ☐ D Wavelength

25. The simple harmonic motion is considered the simplest form of motion.

- ☐ A Wave ☐ B Transitional ☐ C Oscillatory ☐ D Mechanical waves



26. Is the measuring unit of frequency.

- ☐ A Sec. ☐ B hertz ☐ C nm ☐ D m/sec.

27.is/are from mechanical waves.

- ☐ A Water waves ☐ B Radio waves ☐ C Microwaves ☐ D Light

28. Medium particle move along the direction of wave propagation in waves.

- ☐ A transverse ☐ B longitudinal ☐ C radio ☐ D electromagnetic

29. All of the following are electromagnetic waves except waves.

- ☐ A x-rays ☐ B Radio ☐ C Sound ☐ D Light

30. The result of multiplying the frequency and the periodic time equals

- ☐ A $\frac{1}{2}$ ☐ B $\frac{1}{4}$ ☐ C $\frac{1}{3}$ ☐ D 1

31. The kinetic energy of a pendulum increases, when its velocity

- ☐ A Decreases ☐ B Increases ☐ C Is doubled ☐ D Is minimum

32. The movement of a swing is an example of the motion.

- ☐ A Wave ☐ B Transitional ☐ C Oscillatory ☐ D Radio

33. If the velocity of sound waves through air is 340 m/sec, so its velocity in water may be

- ☐ A 335 m/sec ☐ B 3×10^8 m/sec ☐ C 350 m/sec ☐ D 340 m/sec

34. The velocity of light though air is m/sec.

- ☐ A 3×10^8 ☐ B 8×10^3 ☐ C 1500 ☐ D 340

35. A simple pendulum makes 540 complete oscillations in a minute, so its frequency equals

- ☐ A 3 Hz ☐ B 6 Hz. ☐ C 9 Hz ☐ D 2 Hz

36. The complete oscillation contains successive displacements.

- ☐ A Two ☐ B Four ☐ C Quarter ☐ D Half

37. The wavelength of a wave is inversely proportional with the wave's

- ☐ A Velocity ☐ B Frequency ☐ C Kinetic energy ☐ D Amplitude



38. Gigahertz equals Hertz.

- ☐ A 1×10^6 ☐ B 1×10^3 ☐ C 1×10^9 ☐ D 1×10^2

39. The amplitude of the simple pendulum is Of a complete oscillation.

- ☐ A Four times ☐ B A quarter ☐ C A half ☐ D Double

40. is the maximum displacement made by an oscillation away from its rest position.

- ☐ A Periodic time ☐ B Frequency ☐ C Amplitude ☐ D Velocity

41. The periodic time is the time of amplitude(s).

- ☐ A One ☐ B Two ☐ C Three ☐ D Four

42. If the frequency of an oscillating body is 6 Hz, so the periodic time is

- ☐ A 3 sec. ☐ B 6 sec. ☐ C 1 ☐ D $\frac{1}{2}$

43. If an oscillating body made an amplitude in 2 sec., so its frequency is Hz.

- ☐ A $\frac{1}{2}$ ☐ B 8 ☐ C $\frac{1}{8}$ ☐ D 2

44. A simple pendulum makes 540 complete oscillations in a minute, so its frequency is

- ☐ A 3 Hz ☐ B 6 Hz ☐ C 9 Hz ☐ D 12 Hz

45. The periodic time when the number of complete oscillations increases.

- ☐ A Increases ☐ B Decreases ☐ C Is doubled ☐ D Doesn't change

46. The product of frequency and equals unity.

- ☐ A Velocity ☐ B Amplitude ☐ C Periodic time ☐ D wavelength

47. The ratio between the time of the amplitude and time of complete oscillation equals

- ☐ A 1 : 2 ☐ B 2 : 1 ☐ C 1 : 4 ☐ D 4 : 1

48. Meter equals nanometre.

- ☐ A 1×10^6 ☐ B 1×10^3 ☐ C 1×10^9 ☐ D 1×10^4

49. If the time of two successive crests in water wave is 0.2 sec, so the frequency equals =

- ☐ A 20 Hz ☐ B 0.5 Hz ☐ C 5 Hz ☐ D 10 Hz



50. All of the following are electromagnetic waves except waves.

- ☐ A Sound ☐ B Light ☐ C x-rays ☐ D Radio

51. Is a longitudinal mechanical wave.

- ☐ A Light ☐ B Water ☐ C Sound ☐ D Radio

52. All of the following are transverse waves except waves.

- ☐ A Water ☐ B Light ☐ C Sound ☐ D Radio

53. waves need a medium to propagate through it.

- ☐ A Radio ☐ B Infrared ☐ C Water ☐ D Light

54. is the lowest point of the particles of the medium in the transverse wave.

- ☐ A Crest ☐ B Trough ☐ C Compression ☐ D Rarefaction

55. is the distance between two successive crests or troughs.

- ☐ A Frequency ☐ B Velocity ☐ C Amplitude ☐ D Wavelength

56. is the maximum displacement of medium particles away from rest position.

- ☐ A Wavelength ☐ B Amplitude ☐ C Velocity ☐ D Frequency

57. Velocity of sound waves through air equals m/sec.

- ☐ A 8×10^3 ☐ B 3×10^8 ☐ C 340 ☐ D 1500

58. The law of wave propagation says that " Velocity = wavelength \times "

- ☐ A Periodic time ☐ B Frequency ☐ C Amplitude ☐ D Distance

59. Nanometer is the measuring unit of

- ☐ A Frequency ☐ B Velocity ☐ C Wavelength ☐ D Periodic time

60. 1 micrometre = Metre.

- ☐ A 1×10^{-3} ☐ B 1×10^{-6} ☐ C 1×10^9 ☐ D 1×10^6

61. Is the area in the longitudinal wave, at which the medium particles are away from each other.

- ☐ A Trough ☐ B Rarefaction ☐ C Crest ☐ D Compression



62. waves can't propagate through vacuum.

- ☐ A Light ☐ B Sound ☐ C Radio ☐ D x-rays

63. A vibrating source makes 500 waves in 10 seconds, if its wavelength is 20 m, so its velocity is

- ☐ A 50 m/s ☐ B 200 m/s ☐ C 100 m/s ☐ D 1000 m/s

64. In jacuzzi, water moves in the form of waves.

- ☐ A Horizontal ☐ B Oval ☐ C Circular ☐ D Straight

65. waves is used in radars.

- ☐ A Sound ☐ B x-rays ☐ C Radio ☐ D Light

66. is a longitudinal waves.

- ☐ A water ☐ B sound ☐ C radio ☐ D light

67. is from the mechanical waves.

- ☐ A Light ☐ B Water ☐ C x-rays ☐ D Inferred

68. All of these are electromagnetic waves except Waves.

- ☐ A Light ☐ B Radio ☐ C Sound ☐ D Ultraviolet

69. If the distance between the first and fourth compressions is 15m, so wavelength is

- ☐ A 5 m ☐ B 7.5 m ☐ C 30 m ☐ D 10 m

70. If the distance between a crest and the next trough is 3 m, so the wavelength is

- ☐ A 3 m ☐ B 6 m ☐ C 12 m ☐ D 1.5 m

71. If sound waves move from water to air, its velocity

- ☐ A Decreases ☐ B Increases ☐ C Is doubled ☐ D Doesn't change

72. waves can't propagate through vacuum.

- ☐ A Light ☐ B Radio ☐ C Sound ☐ D x-rays

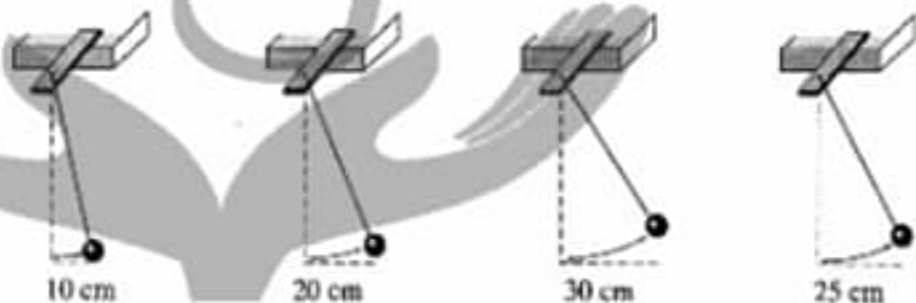


Questions

Unit 1 Lesson 1

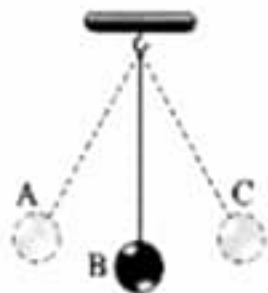
- Choose the correct answer:

- The movement of a swing is known as
 a. transitional motion. b. oscillatory motion.
 c. wave motion. d. (a) and (b) together.
- The oscillating body moves at the two sides of its rest position, so its velocity
 a. decreases when it goes far from its rest position.
 b. increases when it goes far from its rest position.
 c. will reach its maximum value when it passes its rest position.
 d. (a) and (c) together.
- Kinetic energy = $\frac{1}{2} \times$
 a. $\frac{m}{v^2}$ b. mv^2 c. m^2v^2 d. mv^3
- All of the following are examples of oscillatory motion except
 a. motion of string. b. motion of a tuning fork.
 c. motion of car. d. motion of a simple pendulum.
- The amplitude of the simple pendulum is of a complete vibration.
 a. four times b. a quarter c. a half d. double
- The following figures describe the oscillation of a simple pendulum of amplitude =
 a. 30 cm
 b. 25 cm
 c. 20 cm
 d. 10 cm

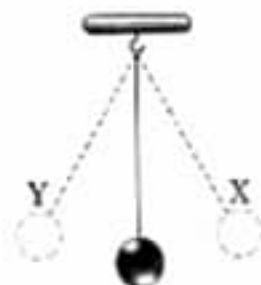


- Which motion of the following represents a complete oscillation for the given simple pendulum ?

- C \longrightarrow B \longrightarrow A \longrightarrow B
- A \longrightarrow B \longrightarrow C \longrightarrow B \longrightarrow A
- A \longrightarrow B \longrightarrow C \longrightarrow B
- B \longrightarrow C \longrightarrow B \longrightarrow A



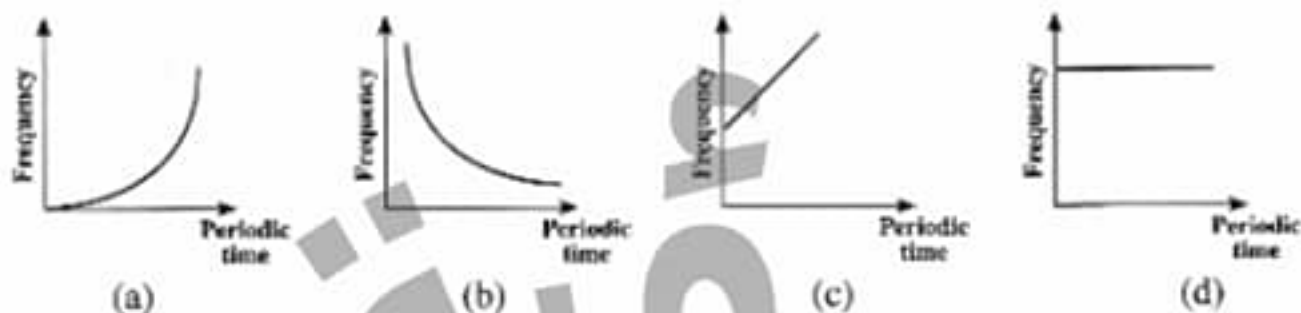
8. The maximum displacement made by the oscillating body away from its rest position is
 a. amplitude. b. frequency. c. periodic time. d. complete oscillation.
9. The complete oscillation includes displacements.
 a. one b. two successive c. three successive d. four successive
10. The periodic time is the time of oscillation.
 a. $\frac{1}{4}$ b. $\frac{1}{2}$ c. $\frac{1}{3}$ d. one complete
11. If the periodic time of an oscillating body is 0.1 sec., so the number of complete oscillations in one minute is
 a. 10 b. 600 c. 120 d. 60
12. The number of complete oscillations that are made by an oscillating body in one second is known as
 a. periodic time. b. amplitude.
 c. frequency. d. time of amplitude.
13. The frequency of the oscillating body is measured by a unit called
 a. Hertz. b. watt/m. c. decibel. d. m/sec.
14. The result of multiplying the frequency of an oscillating body by its periodic time equals
 a. $\frac{1}{2}$ b. $\frac{1}{4}$ c. $\frac{1}{3}$ d. 1
15. In the opposite figure, when the ball of the pendulum moves from (X) to (Y) in a duration of 0.02 seconds, the frequency equals Hertz.
 a. 0.04 b. 0.02
 c. 25 d. 50
16. If the frequency of an oscillating body is 6 Hz, the periodic time is
 a. 3 sec. b. 6 sec. c. $\frac{1}{3}$ sec. d. $\frac{1}{6}$ sec.
17. If the periodic time of an oscillating body is $\frac{1}{6}$ second, this means that
 a. the oscillating body makes 6 complete oscillations in one minute.
 b. the frequency of the oscillating body equals 6 Hz.
 c. the oscillating body makes 360 complete oscillations in one minute.
 d. (b) and (c) are correct.
18. The periodic time of an oscillating body which makes 240 oscillations in one minute equals
 a. 1 sec. b. $\frac{1}{4}$ sec. c. $\frac{1}{2}$ sec. d. 4 sec.



19. A simple pendulum makes 540 complete oscillations in a minute, so its frequency is Hz.

- a. 3 b. 6 c. 9 d. 12

20. Which of the following graphs represents the relation between frequency and periodic time ?



21. 1 Gigahertz = KiloHertz.

- a. 10^2 b. 10^3 c. 10^6 d. 10^9

22. If the frequency of an oscillating body is 5 Hz, so the product of multiplying its frequency by its periodic time equals

- a. 1 b. 5 c. 10 d. 25

23. In the opposite figure, if the maximum displacement done by the spring away from its rest position is 3 cm. Using the figure calculate :

1. The vertical distance covered by the spring through 3 complete oscillations equals cm.

- a. 3 b. 12 c. 24 d. 36

2. The frequency of the spring equals Hz.

- a. 0.2 b. 0.4 c. 2.5 d. 5



Questions

Unit 1 Lesson 2

- Choose the correct answer:

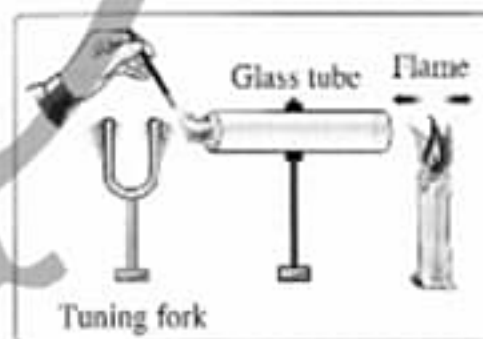
1. Wave is the disturbance that propagates and transfers energy
 - a. in the direction of propagation.
 - b. in a direction opposite to that of propagation.
 - c. in a direction perpendicular to that of propagation.
 - d. no correct answer.
2. In wave motion,
 - a. medium particles move.
 - b. the waves move carrying the energy.
 - c. medium particles vibrate without transferring from their places.
 - d. (b) and (c) are correct.
3. When hitting a tuning fork, the particles of air in touch with it
 - a. don't move.
 - b. vibrate perpendicular to the direction of wave propagation.
 - c. vibrate in the direction of wave propagation with changing their places.
 - d. vibrate in the direction of wave propagation without changing their places.
4. All of the following are the properties of mechanical waves except
 - a. they are longitudinal or transverse waves.
 - b. they don't propagate through vacuum.
 - c. they don't need a medium to propagate through.
 - d. water and sound waves are examples of these waves.
5. is (are) mechanical waves.

a. Water wave only	b. Sound wave only
c. Microwave only	d. Both (a) and (b)
6. Radio waves

a. are transverse mechanical waves.	b. are longitudinal waves.
c. propagate through vacuum.	d. need a medium to propagate through.
7. All of the following are electromagnetic waves except waves.


a. light	b. sound	c. microwaves	d. radio
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8. If the light speed is compared with the sound speed, which of these statements is correct ?

a. Light speed equals sound speed.	b. Light speed is higher than sound speed.
c. Light speed is lower than sound speed.	d. There is no correct answer.

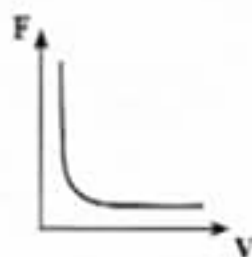


9. Transverse wave consists of
 a. compressions and rarefactions. b. troughs and rarefactions.
 c. compressions and crests. d. crests and troughs.
10. The longitudinal wave consists of
 a. compressions and rarefactions. b. troughs and rarefactions.
 c. compressions and crests. d. crests and troughs.
11. In the opposite figure, the particles of the medium (the coil) vibrate
 a. to the right only.
 b. upwards only.
 c. to right and left.
 d. upwards and downwards.
12. Water waves are transverse waves because the particles of the medium
 a. vibrate perpendicular to the direction of wave propagation.
 b. do not vibrate.
 c. don't need a medium to propagate through.
 d. vibrate along the direction of wave propagation.
13. All of the following are transverse waves except waves.
 a. water b. light c. sound d. radio
14. The electric bell produces pulses of
 a. compressions and rarefactions. b. crests and troughs.
 c. crests and rarefactions. d. compressions and troughs.
15. Scientists saw the explosions that occur on the Sun surface, but they couldn't record the sound of these explosions because the sound
 a. doesn't travel from up to down.
 b. needs a medium to travel through.
 c. is mechanical waves that propagate in definite direction.
 d. is electromagnetic waves that don't propagate through free space.
16. Sound waves are longitudinal waves because the particles of the medium
 a. don't need a medium to propagate through.
 b. don't vibrate.
 c. vibrate along the direction of wave propagation.
 d. vibrate in a direction perpendicular to the direction of wave propagation.
17. The highest point of the particles of the medium in the transverse wave is known as
 a. the crest. b. the compression. c. the rarefaction. d. the trough.
18. Rarefaction is the area of the medium, at which the medium particles
 a. don't vibrate. b. are too close to each other.
 c. are faraway from each other. d. vibrate up and down.

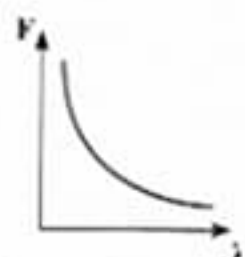


19. Jacuzzi is a tub of physiotherapy where water moves in the form of waves.
 a. circular b. longitudinal c. oval d. no correct answer
20. All the electromagnetic waves have the same in vacuum.
 a. velocity b. amplitude c. frequency d. periodic time
21. The distance between two successive crests or two successive troughs in the transverse wave is
 a. wavelength. b. wave velocity. c. amplitude. d. frequency.
22. The distance between the centres of the second and the fourth compressions is
 a. the wavelength of longitudinal wave.
 b. double the wavelength of longitudinal wave.
 c. double the wavelength of transverse wave.
 d. four times the wavelength of longitudinal wave.
23.  If the distance between the centre of the third compression and that of the fifth compression on the wave propagation is 20 cm, the wavelength of this wave is
 a. 40 cm. b. 20 cm. c. 10 cm. d. 5 cm.
24. 1 millimetre =
 a. 1×10^6 nanometre.
 b. 1×10^3 micrometre.
 c. 1×10^{-3} metre.
 d. all the previous answers.
25. is the maximum displacement of medium particles away from its rest position.
 a. Wavelength b. Frequency of the wave
 c. Amplitude of the wave d. Wave velocity
26. is the measuring unit of wave velocity.
 a. Metre b. Metre/second c. Second d. Hertz
27. Velocity of sound waves through air = m/s.
 a. 1850 b. 1500 c. 3×10^8 d. 340
28. Sound velocity is the greatest through
 a. vacuum. b. solids. c. liquids. d. gases.
29. The distance that is covered by the wave in one second is called
 a. wave velocity. b. wave frequency. c. wavelength. d. no correct answer.
30. The periodic time of a tuning fork which makes 240 waves in one minute equals
 a. 1 sec. b. 4 sec. c. $\frac{1}{2}$ sec. d. $\frac{1}{4}$ sec.
31. The mathematical relation between the velocity and wavelength is
 a. velocity = frequency \times wavelength.
 b. velocity = wavelength / frequency.
 c. wavelength = frequency / velocity.
 d. no correct answer.

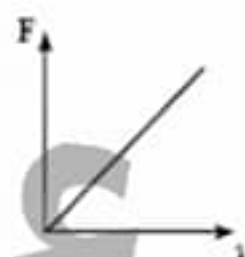
32. Graph represents the relation between frequency (F) and wavelength (λ) for a wave which moves in the same medium.



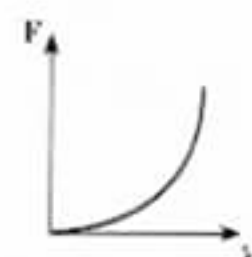
a.



b.

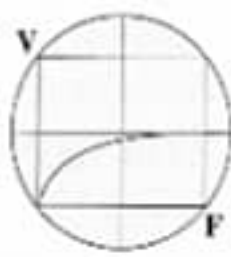


c.



d.

33. Graph represents the relation between frequency and wave velocity at constant wavelength.



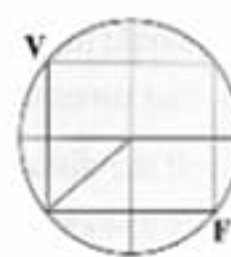
a.



b.



c.



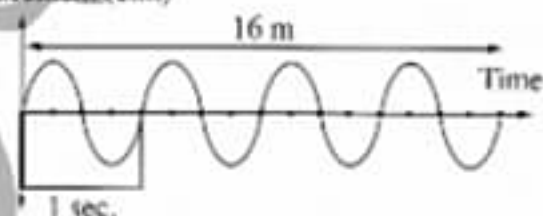
d.

34. From the opposite figure :

Wave frequency and velocity are

- a. (16 , 4). b. (16 , 1).
c. (1 , 4). d. (4 , 1).

Displacement (cm.)



35. A girl stands watching water waves, she saw 4 waves passing in 2 seconds. The wavelength of each wave is 0.5 m, so :

A) Wave frequency =

- a. 2 Hz. b. 4 Hz. c. 4 m/sec. d. 0.25 m/sec.

B) Wave velocity =

- a. 1 m/sec. b. 0.2 m/sec. c. 4 m/sec. d. 0.25 m/sec.

36. In the opposite figure :

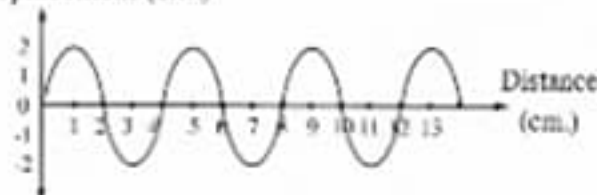
A) The wavelength of the wave equals cm.

- a. 2 b. 4
c. 5 d. 6

B) The amplitude of the wave equals cm.

- a. 1 b. 3 c. 2 d. 4

Displacement (cm.)



37. The wavelength and velocity of the opposite longitudinal wave are

- a. (14 m , 350 m/sec.)
- b. (7 m , 700 m/sec.)
- c. (7 m , 0.14 m/sec.)
- d. (14 m , 0.28 m/sec.)



A. Choose the correct answer:

1. All of the following are examples of oscillatory motion except.....

- a. Motion of string.
- b. motion of tuning.
- b. motion of car.
- d. motion of a simple pendulum.

2.The amplitude of the simple pendulum is acomplete vibration.

- a. half
- b. double
- c. quarter
- d. four times

3. The maximum displacement achieved by the oscillatory body away from its rest position is

- a. Amplitude.
- b. frequency.
- c. periodic time.
- d. complete oscillation.

4. Transverse wave consists of

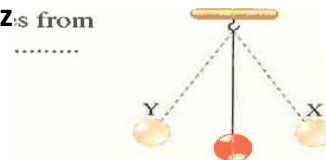
- a. crests and troughs.
- b. Compressions and rarefactions.
- c. Troughs and rarefactions.
- d. Compressions and crests.

5. All of the following are transverse waves except..... waves.

- a. water
- b. sound
- c. radio
- d. light

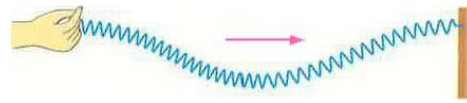
6. In the opposite figure, when the ball of the pendulum moves from (X) to (Y) in a duration of 0.02 seconds, the frequency equalsHertz

- a.0.04
- b. 0.02
- c.25
- d. 50



7. In the opposite figure, the particles of the medium (the coil) vibrate

- a. to the right only.
- b. upwards only.
- c. to right and left.
- d. upwards and downwards.



8. Sound waves are longitudinal waves, because the particles of the medium

- a. don't need a medium to propagate through.
- b. don't vibrate.
- c. vibrate along the direction of wave propagation.
- d. vibrate in a direction perpendicular to the direction of wave propagation.

9. The frequency of the oscillating body is measured by a unit called.....

- a. Hertz.
- b. watt/m.
- c. decibel.
- d. m/sec.

10. The periodic time of an oscillating body which makes 240 oscillations in one minute equals.....

- a. $\frac{1}{4}$ sec .
- b. $\frac{1}{2}$ sec .
- c. 4 sec.
- d. 1 sec.

11. 1 Gigahertz =..... Kilo hertz.

- a. 10^2
- b. 10^3
- c. 10^6
- d. 10^9

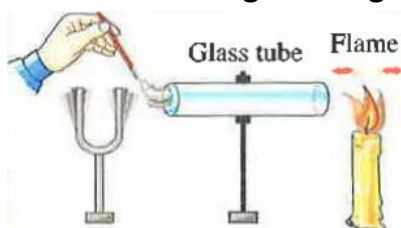
12. If the periodic time of an oscillating body is $\frac{1}{6}$ second, this means that.....

- a. the oscillating body makes 6 complete oscillations in one minute.
- b. the frequency of the oscillating body equals 6 H
- c. the oscillating body makes 360 complete oscillations in one minute.
- d. (b) and (c) are correct.

13. If the frequency of an oscillating body is 5 Hz, so the product of multiplying its frequency by its periodic time equals.....

- a. 1 b. 5 c. 10 d. 25

14. When hitting a tuning fork, the particles of air in touch with it.....



- a. don't move.
b. vibrate perpendicular to the direction of wave propagation.
c. vibrate in the direction of wave propagation with changing their places.
d. vibrate in the direction of wave propagation without changing their places.

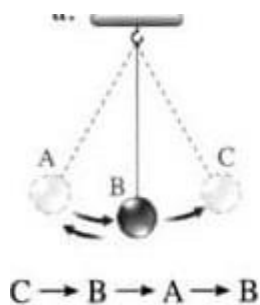
15. The highest point of the particles of the medium in the transverse wave is known as

- a. the crest. b. the compression. c. the rarefaction. d. the trough.

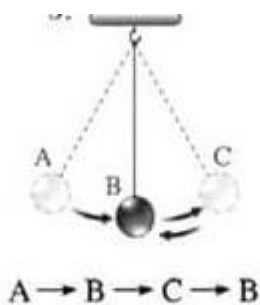
16. Velocity of sound waves through air= m/s.

- a. 1850 b. 3×10^8 c. 1500 d. 340

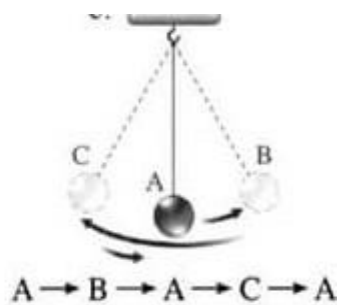
17. Which of the following figure represents a complete oscillation



a



b



c

18..... Is measuring unit of wave velocity

- a. Meter/second b. second c. Meter d. Hertz

19. sound wave are longitudinal wave because the particles of the medium.....

- a. don't vibrate.
b. don't need a medium to propagate through.
c. vibrate along the direction of wave propagation.
d. vibrate in a direction perpendicular o he direction of wave propagation.

20. A simple pendulum makes 540 complete oscillation in a minute, so its frequency is..... Hz.

- a. 9 b. 12 c. 3 d. 6

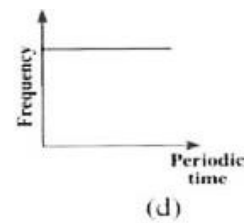
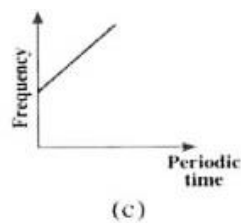
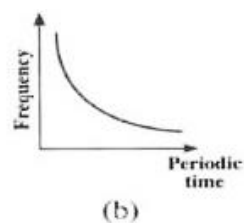
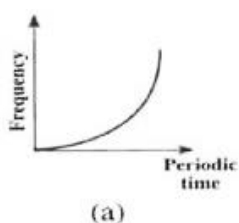
21. The mathematical relation between the velocity and wave length is.....

- a. velocity = frequency x wave length.
b. velocity = wave length / frequency.
c. wave length = frequency / velocity.
d. no correct answer.

22.The includes four successive maximum displacements.

- a. amplitude b. complete oscillation b. wave length c. half complete oscillation

23. Which of the following graphs represents the relation between frequency and periodic time?



24. Sound velocity is the greatest through.....

- a. vacuum. b. solids. c. liquids. d. gases.

25. If the light speed is compared with the sound speed, which of these statements is correct?

- a. Light is lower than sound speed. b. Light speed is higher than sound speed.
c. Light is equal sound speed. d. There are no correct answer.

26. If the frequency of an oscillating body is 100 Hz, so the periodic time is.....seconds.

- a. 0.1 b. 0.01 c. 100 d. 1×10^2

27. 1 Gigahertz =

- a. 1×10^9 hertz. b. 1×10^3 megahertz.
c. 1×10^6 kilohertz. d. all of the previous answer.

28. All of the following are electromagnetic waves except..... waves.

- a. light b. sound c. radio d. microwaves

29. The longitudinal wave consists of

- a. crests and troughs. b. Compressions and refractions.
c. Troughs and refractions. d. Compressions and crests.

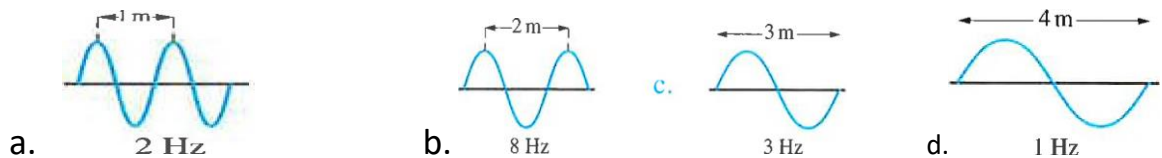
30. The sound waves are.....waves.

- a. longitudinal
- b. transverse
- c. electromagnetic
- d. no correct answer

31. The wave transfers.....in the direction of propagation.

- a. molecules
- b. energy
- c. matter
- d. force

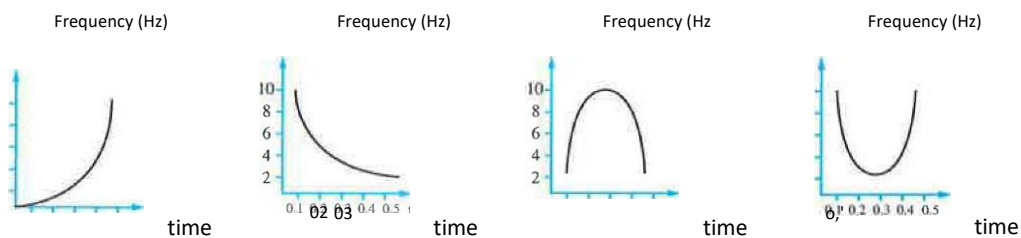
32. The velocity of wave..... is considered the largest one.



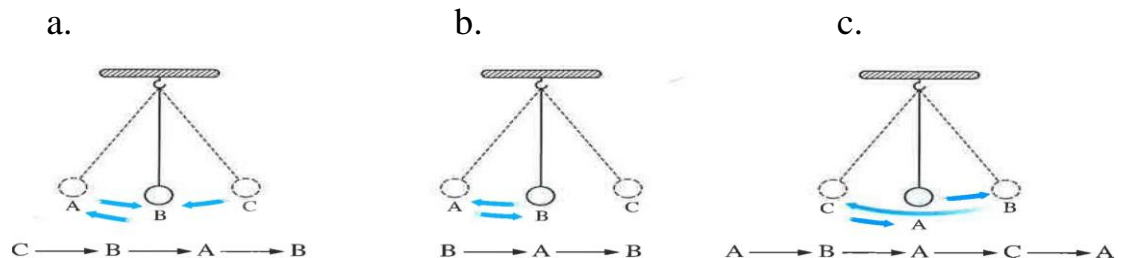
33. If the distance between the center of the third compression and the center of the fifth compression on the wave propagation is 20 cm, then the wavelength of this wave is,.....

- a. 40 cm.
- b. 20 cm.
- c. 10 cm.
- d. 5 cm.

34. Which figure represents the relation between the periodic time and the frequency



35. Which figure represents a half complete oscillation ?.....



36. The double of the horizontal distance between a crest and a trough of a transverse wave is known as

- a. frequency. b. wavelength. c. amplitude. d. wave velocity.

37. If the periodic time of a tuning fork is 4 sec., so the frequency is

- a. 4 Hz. b. $\frac{1}{4}$ Hz. c. $\frac{1}{2}$ Hz. d. 1 Hz.

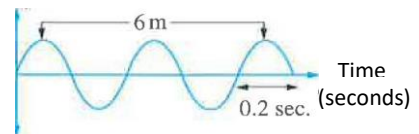
38. The light waves are.....waves.

- a. longitudinal b. transverse
c. electromagnetic d. b and c

39. The wave transfers.....in the direction of propagation.

- a. molecules b. energy c. matter d. force

40. From the opposite figure, find:



1. Wavelength equal:

- a. 6m. b. 3m. c. 2m. d. 12m.

2. The time of one wave (periodic time).....

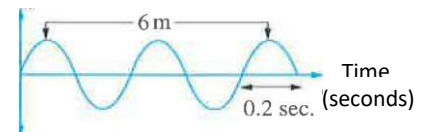
- a. 0.5sec. b. 0.4sec. c. 0.6sec. d. 0.2sec.

3. Frequency.....

- a. 2.5 Hz. b. 50 Hz. c. 100 Hz. d. 12.5 Hz.

4. Wave velocity.....

- a. 10m/s. b. 20m/s. c. 30m/s. d. 7.5m/s.



41. If the distance between the center of the third compression and the center of the fifth compression on the wave propagation is 20 cm, and its wave velocity is 200 m/s then the wavelength of this wave is

- a. 40 m. b. 20 m. c. 10 m. d. 5 m.

Model answer

1-b	9-a	17-c	25-b	33-c	41-b
2-c	10-a	18-a	26-b	34-b	
3-a	11-c	19-c	27-d	35-b	
4-a	12-d	20-a	28-b	36-b	
5-b	13-a	21-a	29-b	37-b	
6-c	14-d	22-b	30-a	38-d	
7-d	15-a	23-b	31-b	39-b	
8-c	16-d	24-b	32-b	40-1-b 2-b 3-a 4-d	



March Revision

★ Choose the right answer:

Mr. Ahmed ElBasha

1. The amplitude of the simple pendulum is of a complete vibration.
a. four times. b. a quarter. c. a half. d. double.
2. Light waves are waves.
a. mechanical transverse b. electromagnetic longitudinal
c. electromagnetic transverse d. mechanical longitudinal
3. A sound wave travels in air with velocity 330 m/s and has a wavelength of 0.1 m, its frequency is
a. 330 KHz. b. 3300 Hz. c. 33 KHz. d. 330 Hz.
4. The speed of the ball of the simple pendulum as we move away from the rest position.
a. doesn't affect b. decreases c. is doubled d. no correct answer
5. If the distance between the center of the third compression and that of the fifth compression is 20 cm, the wavelength of this wave is
a. 40 cm. b. 20 cm. c. 10 cm. d. 5 cm.
6. The distance between two successive compressions is called
a. frequency. b. periodic time. c. wavelength. d. velocity.
7. If the frequency of an oscillating body is 10 Hz, so the periodic time is
a. 10 sec. b. 0.01 sec. c. 0.1 sec. d. 1 sec.
8. The clock pendulum motion is an example of motion.
a. wave b. oscillatory c. circular d. one direction
9. The periodic time of a tuning fork which makes 240 waves in one minute equals
a. 1 sec. b. 4 sec. c. 0.5 sec. d. 0.25 sec.

10. waves are longitudinal waves.

- a. Water b. Light c. Sound d. Radio

11. The measuring unit of wave velocity is

- a. metre. b. metre/sec. c. Hz. d. sec.

12. The highest point in the transverse wave is called

- a. trough. b. compression. c. crest. d. rarefaction.

13. All the following are electromagnetic waves except waves.

- a. light b. sound c. infrared d. radio

14. If the periodic time of an oscillatory body is 0.1 sec., so the number of complete oscillations in one minute is

- a. 10 b. 600 c. 120 d. 60

15. The maximum displacement made by the oscillating body away from its original position is

- a. amplitude. b. frequency. c. periodic time. d. complete.

16. The distance between two successive troughs or two successive crests in the transverse wave is

- a. wavelength. b. amplitude. c. frequency. d. wave velocity.

17. Sound wave travels in air with velocity of 340 m/s. and its frequency is 20 Hz. The wavelength of it is

- a. 14 cm. b. 170 cm. c. 170 m. d. 17 m.

18. The result of multiplying frequency of an oscillating body by its periodic time equals

- a. one. b. negative value. c. constant value. d. variable value.

19. Each complete oscillation consists of amplitudes.

- a. 3 b. 4 c. 2 d. 5

20. The frequency of the oscillating body is measured by a unit called

- a. Hertz. b. Watt/m² c. Decibel. d. m/sec.

21. The transverse waves consists of

- a. crests and compressions. c. crests and troughs.
b. compressions and rarefactions. d. rarefactions and troughs.

22. If the distance between the center of the third compression and the center of the fifth compression on the wave propagation is 40 cm, Then, the wavelength of this wave is

- a. 40 cm. b. 20 cm. c. 10 cm. d. 5 cm.

23. The movement of a swing is known as

- a. translational motion. b. oscillatory motion. c. wave motion. d. a and b

24. kinetic energy = $\frac{1}{2} \times$

- a. m / v^2 b. mv^2 c. m^2v^2 d. mv^3

25. The amplitude of the simple pendulum is of a complete vibration.

- a. four times b. a quarter c. a half d. double.

26. The maximum displacement made by the oscillating body away from its original position is

- a. amplitude. B. frequency c. periodic time d. complete oscillation.

27. The complete oscillation includes displacements.

- a.one b. two successive c. three successive d. four successive.

28. The number of complete oscillations that are made by an oscillating body in one second is known as the

- a. periodic time b. amplitude. C. frequency d. complete oscillation.

29. The frequency of the oscillating body is measured by a unit called.....

- a. Hertz b. watt/m c. decibel d. m/sec.

30. If the frequency of an oscillating body is 6 Hz, so the periodic time is

- a. 3 sec b. 6 sec. c. $\frac{1}{3}$ sec. d. $\frac{1}{6}$ sec.

31. A simple pendulum makes 540 complete oscillations in a minute, so its frequency is Hz

- a. 3 b. 6 c. 9 d. 12

32. In wave motion ,

- a. medium particles move
- b.the waves move carrying the energy.
- c. medium particles vibrate without transferring from their places.
- d . b and c correct.

33. Radio waves

- a. are transverse mechanical waves.
- b. are longitudinal waves.
- c. propagate through vacuum
- d. need a medium to propagate through.

34. All of the following are electromagnetic waves except Waves.

- a. light
- b. sound
- c. x-rays
- d. radio.

35. Transverse wave consists of

- a. compressions and rarefactions
- b. troughs and rarefactions.
- c. compressions and crests.
- d. crests and troughs.

36. All of the following are transverse waves except waves.

- a. water
- b. light
- c. sound
- d. radio

37. The electric bell produces pulses of

- a. compressions and rarefactions.
- b. crests and troughs.
- c. crests and rarefactions
- d. compressions and troughs.

38. The highest point of the particles of the medium in the transverse wave is known as.

.....

- a. the crest
- b. the compression
- c. the rarefaction.
- d. the trough.

39. Jacuzzi is a tube where water moves in the form of waves.

- a. circular
- b. longitudinal
- c. oval
- d. no correct answer.

40. The distance between two successive crests or two successive troughs in the transverse wave is

- a. wavelength.
- b. wave velocity
- c. amplitude.
- D. frequency.

41. The distance between the centers of the second and the fourth compressions is

- a. the wavelength of longitudinal wave.
- b. double the wavelength of longitudinal wave.
- c. double the wavelength of transverse wave.
- d. four times the wavelength of longitudinal wave.

42. is the measuring unit of wave velocity.

- a. metre
- b. metre / second
- c. second
- d. Hertz.

43. The mathematical relation between the velocity and wavelength is

- a. $\text{velocity} = \text{frequency} \times \text{wavelength}$.
- b. $\text{velocity} = \text{wavelength} / \text{frequency}$.
- c. $\text{wavelength} = \text{frequency} / \text{velocity}$.
- d. no correct answer.

44. A girl stand watching water waves, she saw 4 waves passing in 2 seconds, the wavelength for each wave is 0.5 m so,

A: the wave frequency =

- a. 2 Hz
- b. 4 Hz
- c. 4 m/sec
- d. 0.25 m/sec.

B: the wave velocity =

- a. 1 m/sec
- b. 0.2 m/sec
- c. 4 m/sec
- d. 0.25 m/sec.

Model answer

- | | | | | |
|-------|-------|-------|-------|-----------|
| 1. B | 11. B | 21. C | 31. C | 41. B |
| 2. C | 12. C | 22. B | 32. D | 42. B |
| 3. B | 13. B | 23. B | 33. C | 43. A |
| 4. B | 14. B | 24. B | 34. C | 44. A & A |
| 5. C | 15. A | 25. B | 35. D | |
| 6. C | 16. A | 26. A | 36. C | |
| 7. C | 17. D | 27. B | 37. A | |
| 8. B | 18. A | 28. C | 38. A | |
| 9. D | 19. B | 29. A | 39. A | |
| 10. C | 20. A | 30. D | 40. A | |

March Revision Prep - 2

Choose the correct answer:

1. The movement of a swing is known as.....

- a. transitional motion. b. oscillatory motion. c. wave motion. d. (a) and (b) together.

2. The oscillating body moves at the two sides of its rest position, so its velocity.....

- a. decreases when it goes far from its rest position.
b. increases when it goes far from its rest position.
c. will reach its maximum value when it passes its rest position.
d. (a) and (c) together.

3. Kinetic energy = $\frac{1}{2} \times$

- a. $\frac{m}{V^2}$ b. mv^2 c. m^2v^2 d. mv^3

4. All of the following are examples of oscillatory motion except.....

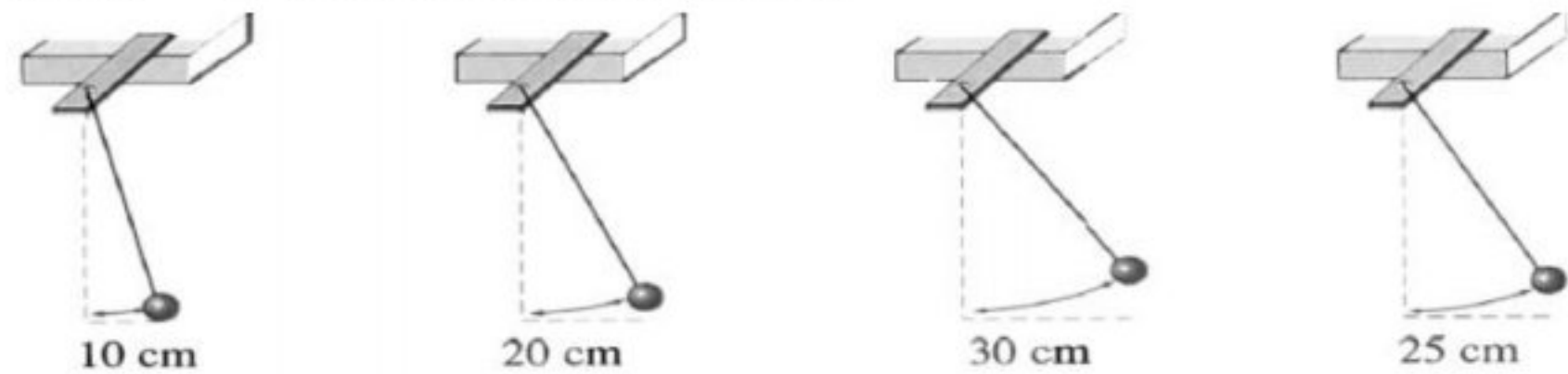
- a. motion of string. b. motion of a tuning fork.
c. motion of car. d. motion of a simple pendulum.

5. The amplitude of the simple pendulum is.....of a complete vibration.

- a. four times b. a quarter c. a half d. double

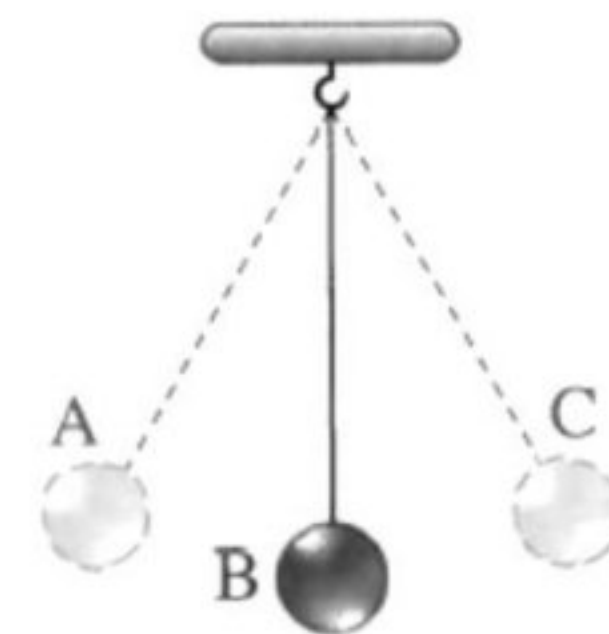
6. The following figures describe the oscillation of a simple pendulum at different intervals of time. The amplitude of such pendulum =

- a. 30 cm
b. 25 cm
c. 20 cm
d. 10 cm



7. Which motion of the following represents a complete oscillation for the given simple pendulum ?

- a. C \longrightarrow B \longrightarrow A \longrightarrow B
b. A \longrightarrow B \longrightarrow C \longrightarrow B \longrightarrow A
c. A \longrightarrow B \longrightarrow C
d. B \longrightarrow C \longrightarrow B \longrightarrow A



8. The maximum displacement made by the oscillating body away from its rest position is.....

- a. amplitude. b. frequency. c. periodic time. d. complete oscillation.

9. The complete oscillation includesdisplacements.

- a. one b. two successive c. three successive d. four successive

10. The periodic time is the time of.....oscillation.

- a. $\frac{1}{4}$ b. $\frac{1}{2}$ c. $\frac{1}{5}$ d. one complete

11. If the periodic time of an oscillating body is 0.1 sec., so the number of complete oscillations in one minute is.....

- a. 10 b. 600 c. 120 d. 60

12. The number of complete oscillations that are made by an oscillating body in one second is known as.....

- a. periodic time b. amplitude. c. frequency d. complete oscillation.

13. The frequency of the oscillating body is measured by a unit called.....

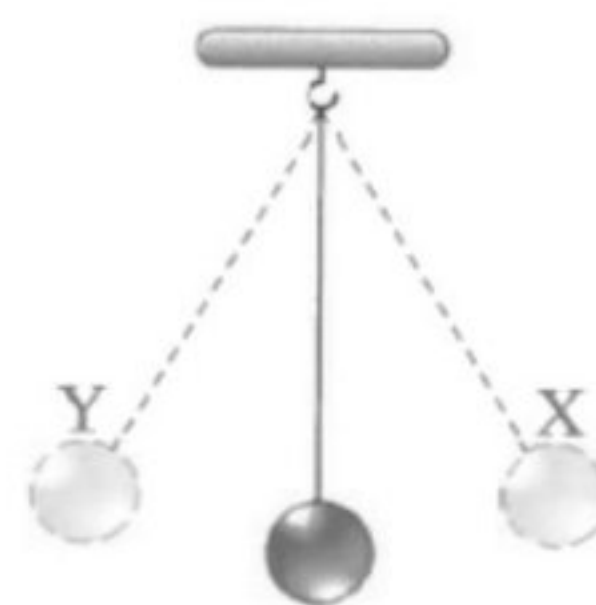
- a. Hertz. b. watt/m. c. decibel. d. m/sec.

14. The result of multiplying the frequency of an oscillating body by its periodic time equals...

- a. 1 b. $\frac{1}{2}$ c. $\frac{1}{4}$ d. $\frac{1}{3}$

15. In the opposite figure, when the ball of the pendulum moves from (X) to (Y) in a duration of 0.02 seconds, the frequency equalsHertz.

- a. 0.04 b. 0.02
c. 25 d. 50



16. If the frequency of an oscillating body is 6 Hz, so periodic time is.....

- a. 3 sec. b. 6 sec. c. $\frac{1}{3}$ sec. d. $\frac{1}{6}$ sec.

17. If the periodic time of an oscillating body is $\frac{1}{6}$ second, this means that.....

- a. the oscillating body makes 6 complete oscillations in one minute.
b. the frequency of the oscillating body equals 6 Hz.
c. the oscillating body makes 360 complete oscillations in one minute.
d. (b) and (c) are correct.

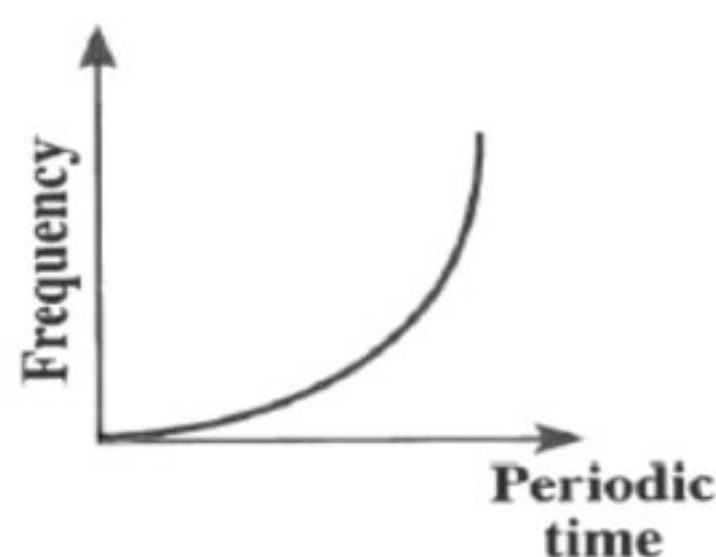
18. The periodic time of an oscillating body which makes 240 oscillations in one minute equals.....

- a. 1 sec b. $\frac{1}{4}$ sec c. $\frac{1}{2}$ sec d. 4 sec

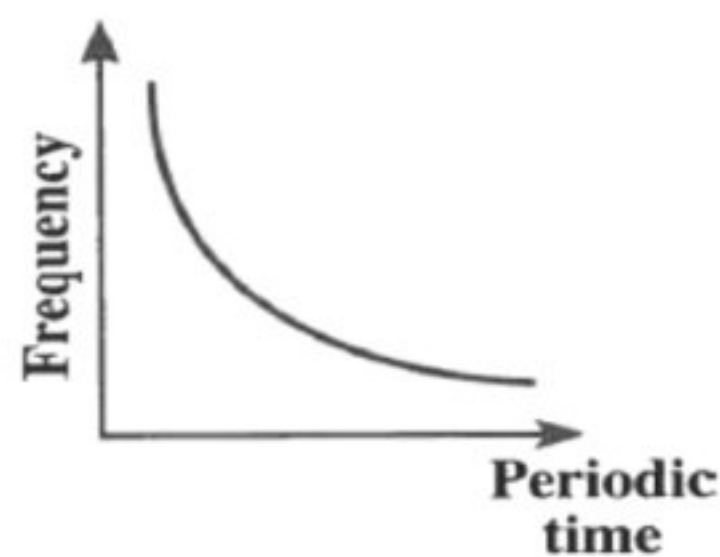
19. A simple pendulum makes 540 complete oscillations in a minute, so its frequency is.....Hz.

- a. 3 b. 6 c. 9 d. 12

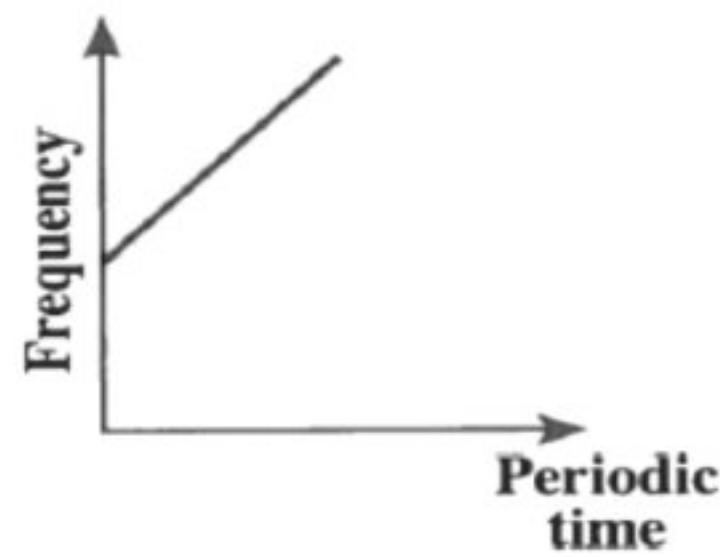
20. Which of the following graphs represents the relation between frequency and periodic time?



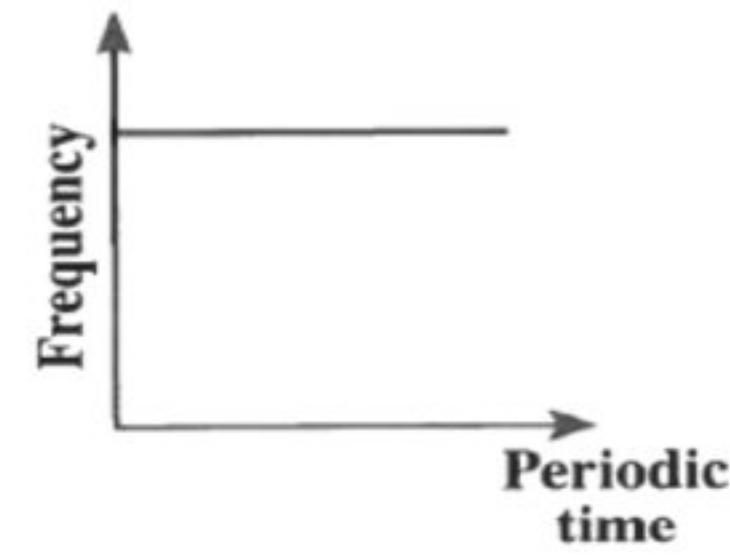
(a)



(b)



(c)



(d)

21. 1 Gigahertz =.....Kilohertz.

- a. 10^2 b. 10^3 c. 10^6 d. 10^9

22. If the frequency of an oscillating body is 5 Hz, So the product of multiplying its frequency by its periodic time equals.....

- a. 1 b. 5 c. 10 d. 25

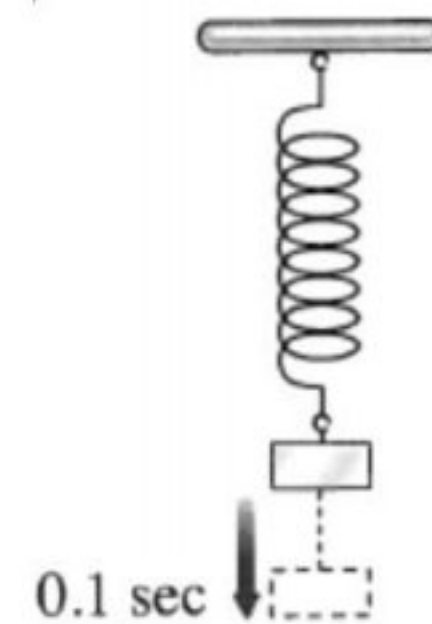
23. In the opposite figure, if the maximum displacement done by the spring away from its rest position is 3 cm. using the figure calculate:

1. The vertical distance covered by the spring through 3 complete oscillations equalscm.

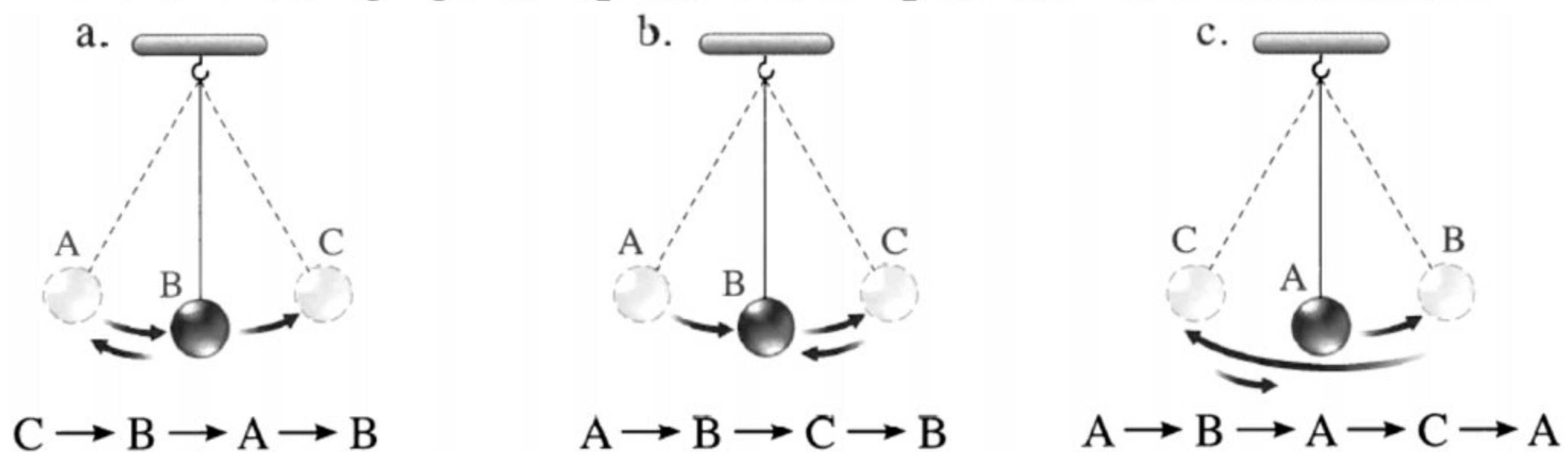
- a. 3 b. 12 c. 24 d. 36

2. The frequency of the spring equals Hz.

- a. 0.2 b. 0.4 c. 2.5 d. 5



24. Which of the following figures represents a complete oscillation.....



25. From the opposite figure, choose the correct answer:

a. The periodic time =.....

[0.2 sec. - 0.4 sec. - 0.6 sec. - 0.4 m]

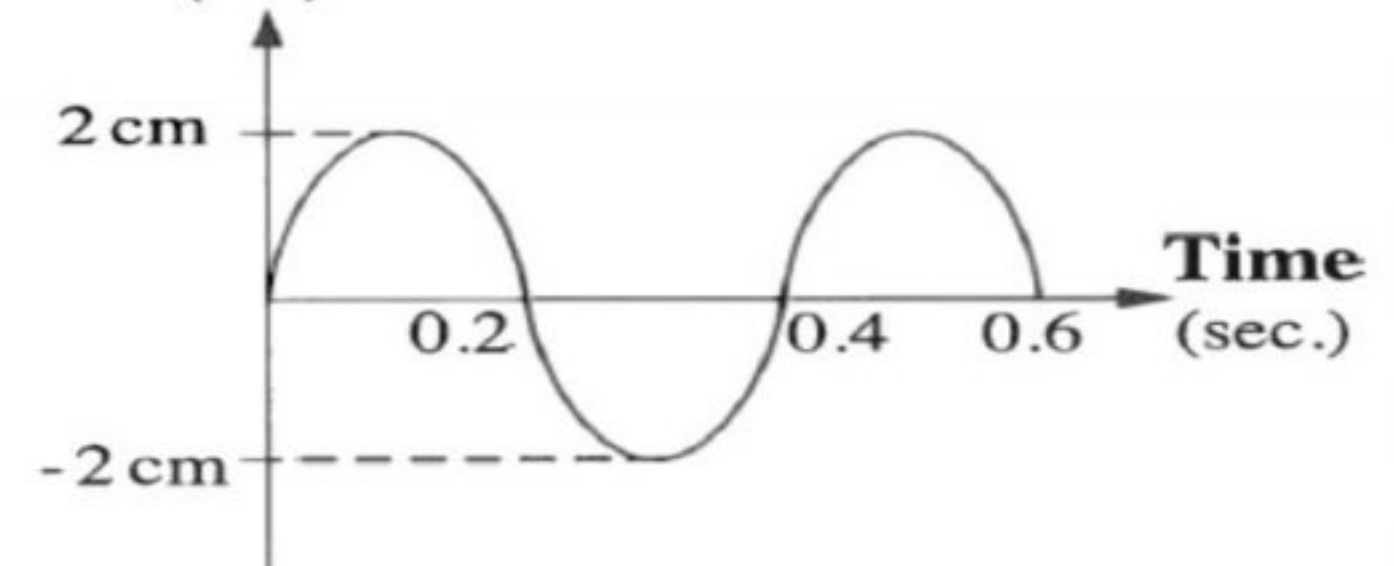
b. Frequency =

[0.2 sec. - 0.4 Hz - 2.5 cycle/sec. - 0.4 m]

c. The amplitude =.....

[0.2 sec. - 0.4 sec. - 2 cm - 0.4 cm]

Displacement (cm)



26. Wave is the disturbance that propagates and transfers energy.....

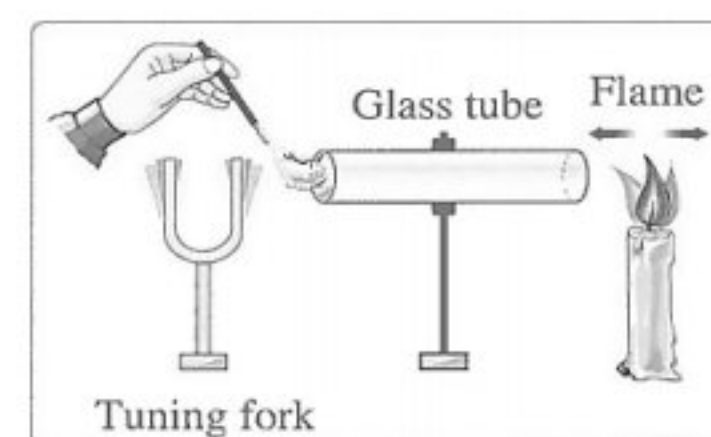
- a. in the direction of propagation.
b. in a direction opposite to that of propagation.
c. in a direction perpendicular to that of propagation.
d. no correct answer.

27. In wave motion,.....

- a. medium particles move.
b. the waves move carrying the energy.
c. medium particles vibrate without transferring from their places.
d. (b) and (c) are correct.

28. When hitting a tuning fork, the particles of air in touch with it.....

- a. don't move.
- b. vibrate perpendicular to the direction of wave propagation.
- c. vibrate in the direction of wave propagation with changing their places.
- d. vibrate in the direction of wave propagation without changing their places.



29. All of the following are the properties of mechanical waves except.....

- a. they are longitudinal or transverse waves.
- b. they don't propagate through vacuum.
- c. they don't need a medium to propagate through.
- d. water and sound waves are examples of these waves.

30.is (are) mechanical waves.

- a. Water wave only
- b. Sound wave only
- c. Microwave only
- d. Both (a) and (b)

31. Radio waves.....

- a. are transverse mechanical waves.
- b. are longitudinal waves.
- c. propagate through vacuum.
- d. need a medium to propagate through.

32. All of the following are electromagnetic waves except.....waves.

- a. light
- b. sound
- c. microwaves
- d. radio

33. If the light speed is compared with the sound speed, which of these statements is correct?

- a. Light speed equals sound speed.
- b. Light speed is lower than sound speed.
- c. Light speed is higher than sound speed.
- d. There is no correct answer.

34. Transverse wave consists of.....

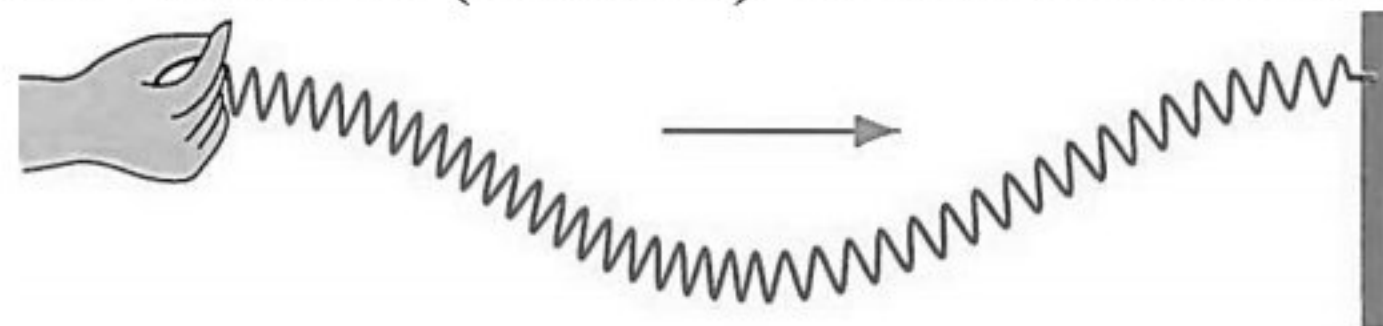
- a. compressions and rarefactions.
- b. troughs and rarefactions.
- c. compressions and crests.
- d. crests and troughs.

35. The longitudinal wave consists of.....

- a. compressions and rarefactions.
- b. troughs and rarefactions.
- c. compressions and crests.
- d. crests and troughs.

36. In the opposite figure, the particles of the medium (the coil) vibrate.....

- a. to the right only.
- b. upwards only.
- c. to right and left.
- d. upwards and downwards.



37. Water waves are transverse waves because the particles of the medium.....

- a. vibrate perpendicular to the direction of wave propagation.
- b. do not vibrate.
- c. don't need a medium to propagate through.
- d. vibrate along the direction of wave propagation.

38. All of the following are transverse waves except waves.

- a. water
- b. light
- c. sound
- d. radio

39. The electric bell produces pulses of

- a. compressions and rarefactions.
- b. crests and troughs.
- c. crests and rarefactions.
- d. compressions and troughs.

40. Scientists saw the explosions that occur on the Sun surface, but they couldn't record the sound of these explosions because the sound

- a. doesn't travel from up to down.
- b. needs a medium to travel through.
- c. is mechanical waves that propagate in definite direction.
- d. is electromagnetic waves that don't propagate through free space.

41. Sound waves are longitudinal waves because the particles of the medium

- a. don't need a medium to propagate through.
- b. don't vibrate.
- c. vibrate along the direction of wave propagation.
- d. vibrate in a direction perpendicular to the direction of wave propagation.

42. The highest point of the particles of the medium in the transverse wave is known as.....

- a. the crest.
- b. the compression.
- c. the rarefaction.
- d. the trough.

43. Rarefaction is the area of the medium, at which the medium particles

- a. don't vibrate.
- b. are too close to each other.
- c. are far away from each other.
- d. vibrate up and down.

44. Jacuzzi is a tub of physiotherapy where water moves in the form ofwaves.

- a. circular
- b. longitudinal
- c. oval
- d. no correct answer

45. The distance between two successive crests or two successive troughs in the transverse wave is.....

- a. wavelength
- b. wave velocity.
- c. amplitude.
- d. frequency.

46. The distance between the centers of the second and the fourth compressions is.....

- a. the wavelength of longitudinal wave.
- b. double the wavelength of longitudinal wave.
- c. double the wavelength of transverse wave.
- d. four times the wavelength of longitudinal wave.

47. If the distance between the center of the third compression and that of the fifth compression on the wave propagation is 20 cm., the wavelength of this wave is.....

- a. 40 cm.
- b. 20 cm.
- c. 10 cm.
- d. 5 cm.

48.is the maximum displacement of medium particles away from its rest position.

- a. Wavelength
- b. Frequency of the wave
- c. Amplitude of the wave
- d. Wave velocity

49.is the measuring unit of wave velocity.

- a. Meter
- b. Meter/second
- c. Second
- d. Hertz

50. Velocity of sound waves through air =m/s.

- a. 1850
- b. 1500
- c. 3×10^8
- d. 340

51. Sound velocity is the greatest through.....

- a. vacuum. b. solids. c. liquids. d. gases.

52. The distance that is covered by the wave in one second is called

- a. wave velocity. b. wave frequency.
c. wavelength. d. no correct answer.

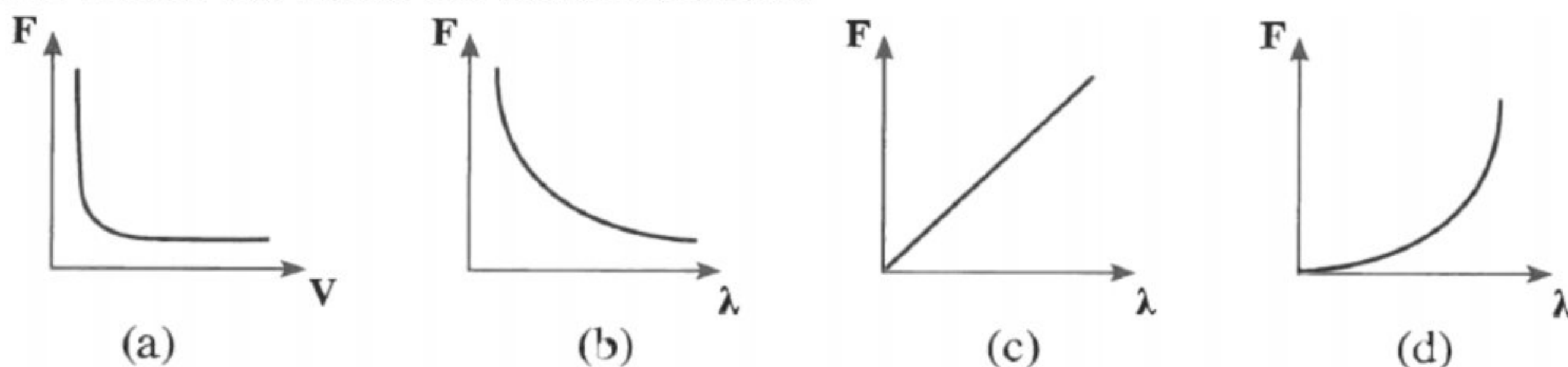
53. The periodic time of a tuning fork which makes 240 waves in one minute equals.....

- a. 1 sec. b. 4 sec. c. $\frac{1}{2}$ sec. d. $\frac{1}{4}$ sec.

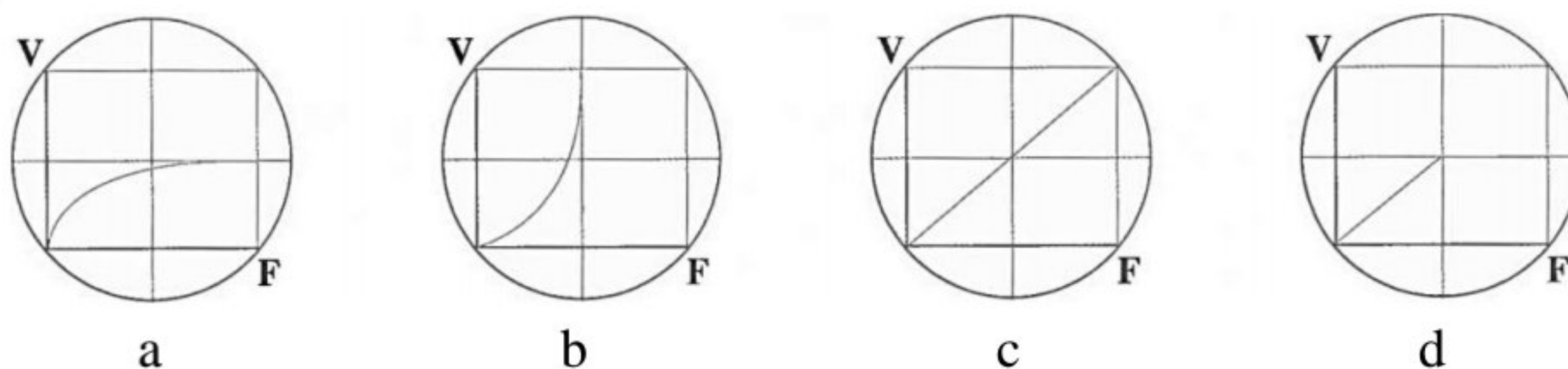
54. The mathematical relation between the velocity and wavelength is

- a. velocity = frequency x wavelength. b. velocity = wavelength / frequency.
c. wavelength = frequency / velocity. d. no correct answer.

55. The graph (.....) represents the relation between frequency (F) and wavelength (X) for a wave which moves in the same medium.



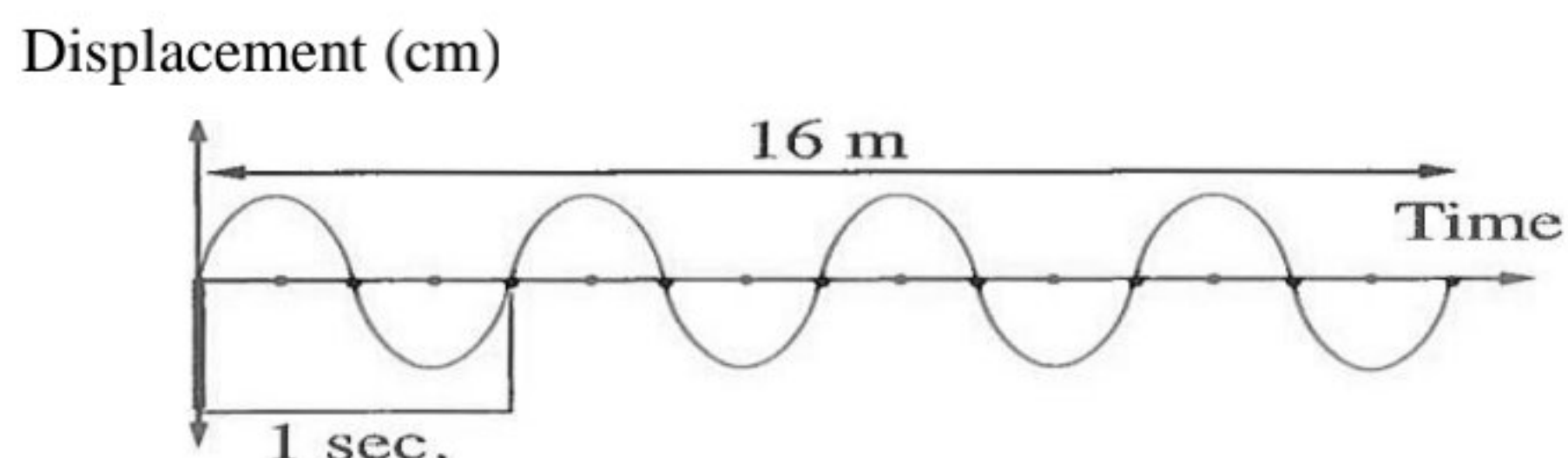
56. Graph.....represents the relation between frequency and wave velocity at constant wavelength.



57. From the opposite figure:

Wave frequency and velocity are.....

- a. (16 , 4). b. (16 , 1).
c. (1 , 4). d. (4 , 1).



58. A girl stands watching water waves, she saw 4 waves passing in 2 seconds. The wavelength of each wave is 0.5 m, so

A) Wave frequency =.....

- a. 2 Hz. b. 4 Hz. c. 8 Hz d. 0.5 Hz

B) Wave velocity =.....

- a. 1 m/sec. b. 0.2 m/sec. c. 4 m/sec d. 0.25 m/sec

59. In the opposite figure :

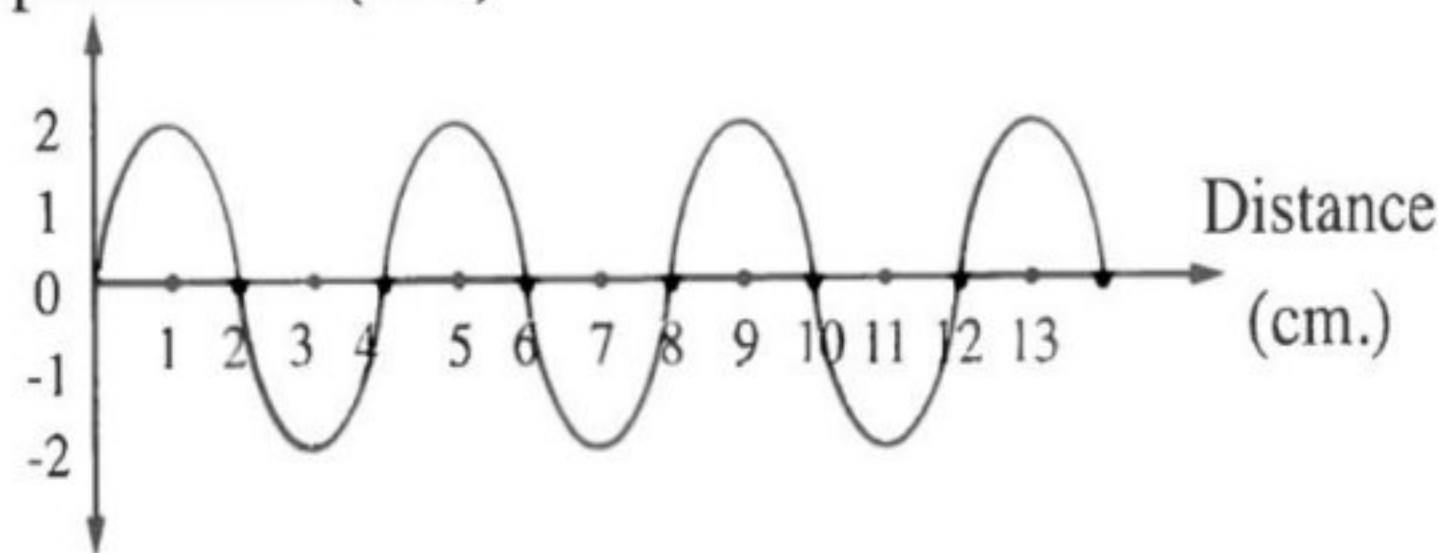
A) The wavelength of the wave equals.....cm.

- a.2 b.4 c.5 d.6

B) The amplitude of the wave equals..... cm.

- a. 1 b. 3 c. 2 d.4

Displacement (cm.)



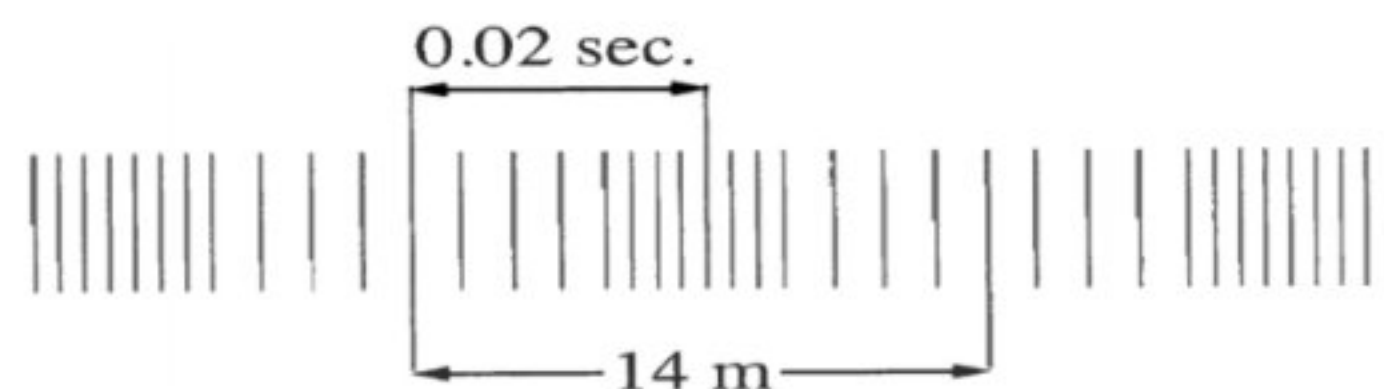
60. The wavelength and velocity of the opposite longitudinal wave are.....

a. (14 m, 350 m/sec.)

b. (7 m, 700 m/sec.)

c. (7 m, 0.14 m/sec.)

d. (14 m, 0.28 m/sec.)



61.All the electromagnetic waves have the same.....in vacuum.

a. velocity

b. amplitude

c. frequency

d. periodic time

62.1 millimeter =

a. 1×10^6 nanometer

b. 1×10^{-3} meter.

c. 1×10^3 micrometer.

d. all the previous answers.

63. The opposite figure represents the relation between the displacement in meters and time in seconds from the drawing, answer the following questions:

1. Amplitude =

a. 2 cm.

b. 3 cm.

c. 4 cm.

d. 8 cm.

2. Periodic time =.....

a. $1/8$ cycle/sec.

b. 0.25 Hz

c. 4 sec.

d. 8 sec.

3. Frequency =

a. $1/8$ Hz

b. 0.25 Hz

c. 4 sec.

d. 8 cm.

4. Wavelength =.....

a. $1/8$ Hz

b. 0.25 Hz

c. 4 cm.

d. 10 cm.

5. Wavelength in meters =

a. $1/8$ cycle/sec.

b. 0.25 Hz

c. 1 m.

d. 0.1 m.

6. Wave velocity =

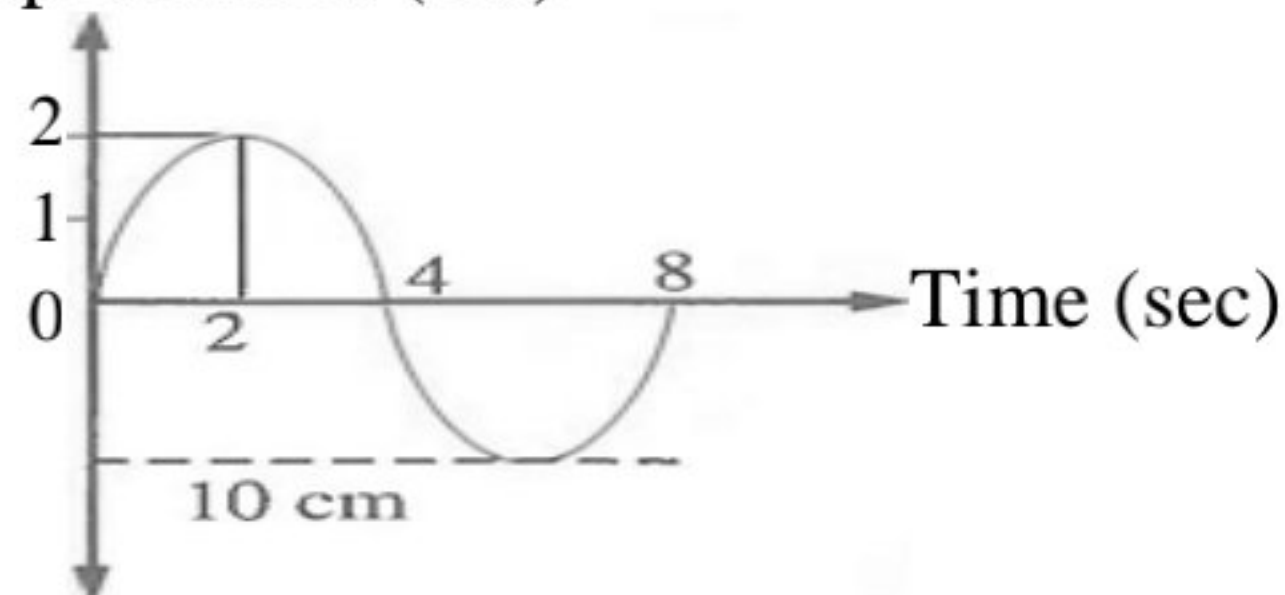
a. 1 m/sec.

b. 0.2 m/sec.

c. 4 m/sec.

d. 0.0125 m/sec.

Displacement (cm)



64. The.....includes four successive maximum displacements.

a. amplitude

b. complete oscillation

c. wavelength

d. half complete oscillation

65.If the frequency of an oscillating body is 100 Hz, so the periodic time is.....seconds.

a. 100

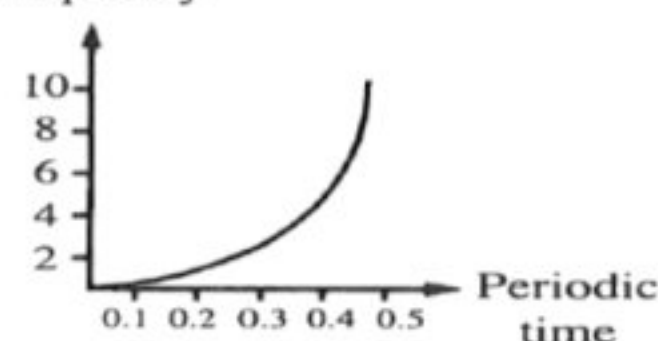
b. 0.01

c. 0.1

d. 1×10^2

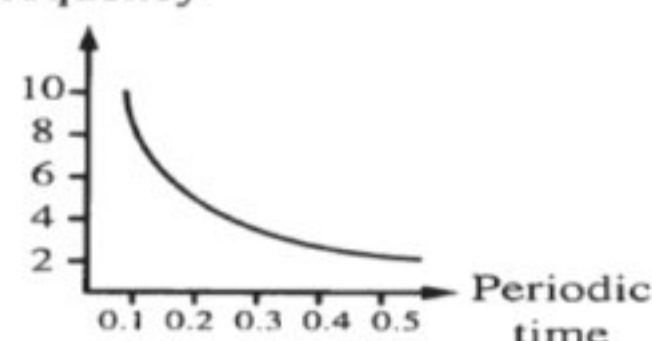
66. Which figure represents the relation between the periodic time and the frequency?

Frequency



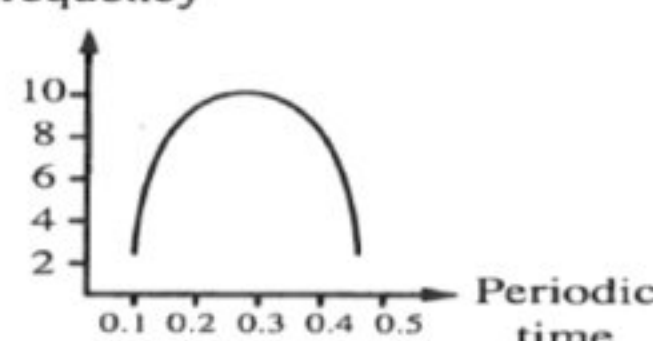
a.

Frequency



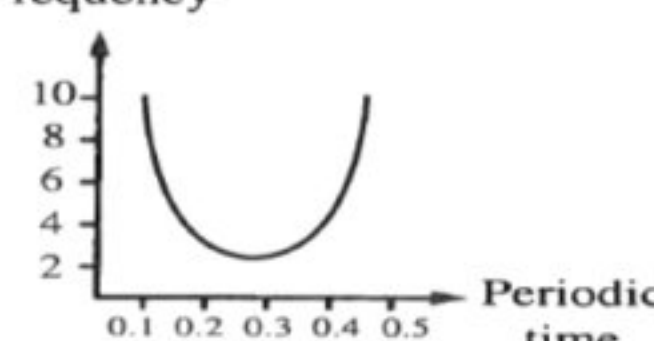
b.

Frequency



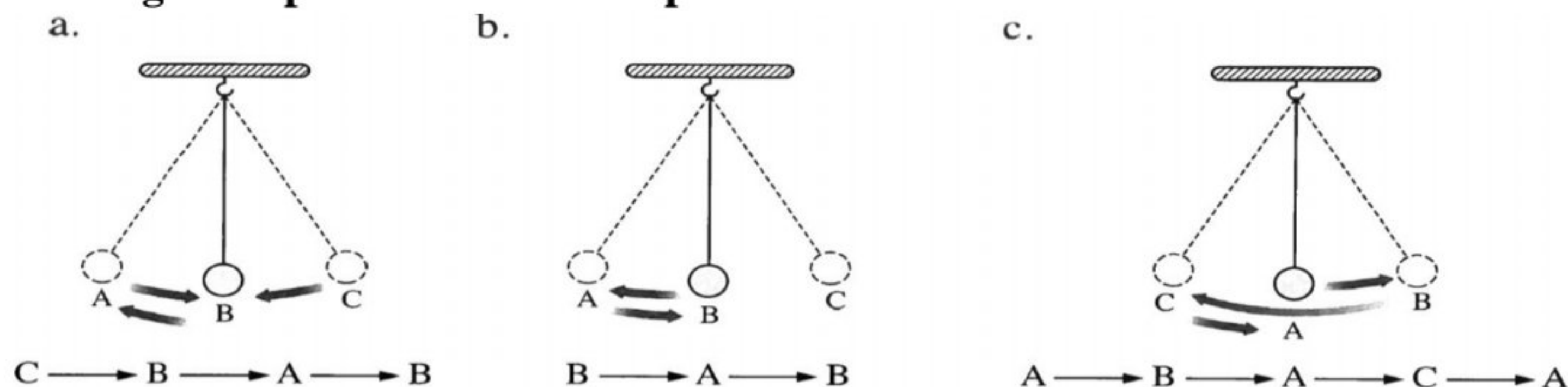
c.

Frequency



d.

67. Which figure represents a half complete oscillation?



68. From the opposite figure choose the correct answer:

1. The periodic time =

- a. 2 sec. b. 8 sec.
c. 6 sec. d. 3 cm.

2. The frequency =

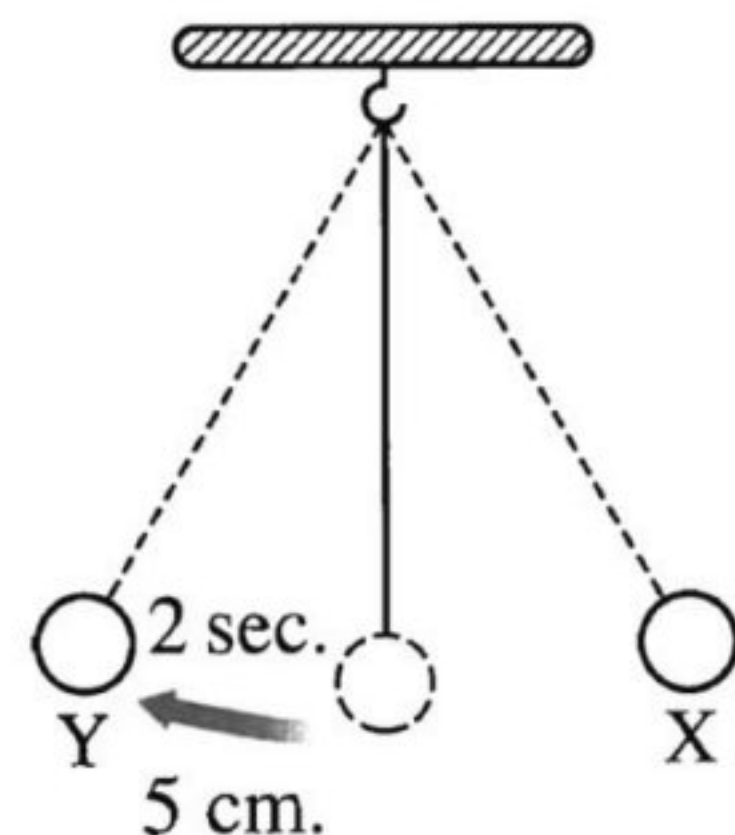
- a. 0.2 sec. b. 0.4 Hz.
c. $\frac{1}{8}$ cycle/sec. d. 0.4 m.

3. Amplitude =

- a. 0.2 sec. b. 0.4 Hz. c. 3 cm. d. 5 cm

4. The distance covered in a complete oscillation =

- a. 0.2 sec. b. 0.4 Hz. c. 20 cm. d. 5 cm.



69. The wave transfers.....in the direction of propagation.

- a. molecules b. energy c. matter d. force

70. The double of the horizontal distance between a crest and a trough of a transverse wave is known as.....

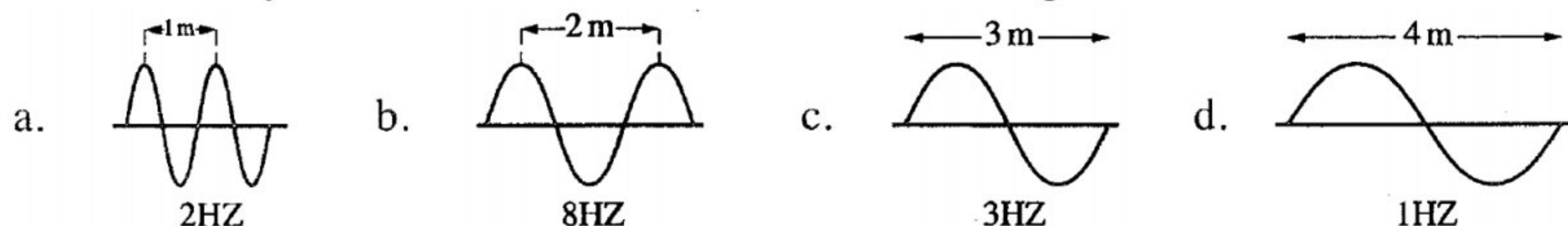
- a. frequency. b. wavelength. c. amplitude. d. wave velocity.

71. From the following table, the waveis considered as an electromagnetic wave.

Wave	A	B	C	D
Velocity	330	330	3×10^8	3×10^8
Type	Longitudinal	Transverse	Longitudinal	Transverse

- a. A b. B c. C d. D

72. The velocity of wave.....is considered the largest one.



73. If the frequency of an oscillating body is 5 Hz. So, the product of multiplying of its frequency and its periodic time =

- a. 1 b. 5 c. 10 d. 25

1 - Write the definition of each of the following :

- 1 - Periodic motion :.....
.....
- 2 - Oscillatory (vibrational) motion :.....
.....
- 3 - Amplitude :.....
.....and its measuring unit is.....
- 4 - Complete oscillation (vibration) :.....
.....
- 5 - Periodic time (T) :.....
.....and its measuring unit is.....
- 6 - Frequency (F) :.....
.....and its measuring unit is.....

2 - What is meant by :

- 1 - The amplitude of an oscillating body is 6 cm?.....
.....
- 2 - The periodic time of a tuning fork is 0.5 sec?.....
.....
- 3 - The frequency of a simple pendulum is 60 Hz?.....
.....
- 4 - The time taken by a spring to make 60 complete oscillations is 1 minute?.....
.....
- 5 - The number of complete oscillations made by an oscillating body in 10 seconds is 500 complete oscillations?.....
.....

3 - Write the scientific term for each of the following :

- 1 - The motion which is regularly repeated in equal periods of time

- 2 - It is the motion of the oscillating body around its rest point, where the motion is repeated through equal intervals of time
- 3 - The periodic motion made by a body around its point of rest, where the motion is repeated through equal intervals of time
- 4 - It is the maximum displacement done by the oscillating body away from its rest (original) position
- 5 - It is the motion of an oscillating body when it passes by a fixed point on its path two successive times in the same direction
- 6 - It is the time taken by an oscillating body to make one complete oscillation
- 7 - The time of one complete oscillation
- 8 - The measuring unit of the periodic time
- 9 - It the number of complete oscillations produced by an oscillating body in one second
- 10 - The measuring unit of the frequency
- 11 - The *reciprocal* of frequency
- 12 - The *reciprocal* of periodic time

4 – Mention the unit(s) used for measuring each of :

- 1 – Amplitude (.....)
- 2 – Periodic time (T) (.....)
- 3 – Frequency (F) (.....)

5 – Mention the mathematical relation (formula) (law) for :

- 1 – Amplitude and complete oscillations of an oscillating body
.....
- 2 - Periodic time and number of complete oscillations made by an oscillating body in a certain time
.....

3 - Periodic time and time of amplitude

.....

4 - Frequency and number of complete oscillations made by an oscillating body in a certain time

.....

5 - Frequency and periodic time

.....

6 - Complete the following sentences :

1 -motion is the motion which is regularly.....in equal periods of time

2 - There are two types of periodic motion which are.....and.....

3 - The movement of.....and.....are examples of oscillatory motion

4 - The movement of swing is an example of.....motion, because it repeats its movement in.....periods

5 - Motion of rotary bee is not considered as a.....motion, although it is a.....motion

6 - Kinetic energy =and its measuring unit is.....

7 - The velocity of the oscillating body reaches its maximum value when it passes its.....while it becomes zero when it reaches its.....

8 - The kinetic energy of the oscillating body reaches its.....value when it passes its original position, while it becomes.....when it reaches the maximum displacement

9 - The oscillatory motion is the motion of the oscillating body around its.....point and its velocity is.....when it passes this point

10 - The simple harmonic motion is an example of.....

11 - The amplitude is.....and its measuring unit is.....

12 - The complete oscillation **comprises**.....successive displacements, each one is called.....

13 - One complete oscillation =amplitudes

14 - Amplitude =complete oscillation

15 - The periodic time is the time ofand its measuring unit is.....

16 - Periodic time (T) = $\frac{\text{.....}}{\text{.....}}$

17 - The periodic time isproportional to the number of complete oscillations

18 - By increasing the number of complete oscillations made by a simple pendulum, the periodic time.....

19 - The periodic time =x the time of amplitude

20 - The time of amplitude =the periodic time

21 - The frequency is thein one second and its measuring unit is.....

22 - From the memorial of the scientist Hertz, the measuring unit of frequency is..... which is symbolized by.....

23 - Frequency (F) = $\frac{\text{.....}}{\text{.....}}$

24 - Kilo hertz =Hz, Mega hertz =Hz and giga hertz equalsHz

25 - 20 mega hertz =giga hertz

26 - The frequency isproportional to the number of complete oscillations

27 - By increasing the number of complete oscillations made by a simple pendulum, the frequency

28 - The result of multiplying the frequency of a spring by its periodic time equals....

29 - (Frequency x Periodic time) - 1 =

30 - Frequency (F) = $\frac{\text{.....}}{\text{Periodic time (T)}}$

31 - Periodic time (T) = $\frac{\text{.....}}{\text{Frequency (F)}}$

32 - The periodic time is theof the frequency

33 - The frequency is theof the periodic time

34 - The frequency isproportional to the periodic time

35 - When the frequency of the moving pendulum increases, its periodic time.....

7 - Give reason for each of the following :

- 1 - The oscillatory motion (or wave motion) is considered as a periodic motion?.....
.....
- 2 - The motion of spring (tuning fork) is considered as an oscillatory motion?.....
.....
- 3 - The motion of the rotary bee is a periodic motion, but it is not an oscillatory motion?.....
.....
- 4 - The velocity of the simple pendulum reaches to a maximum value?.....
.....
- 5 - The velocity (speed) of the body is taken as measure of its kinetic energy?.....
.....
- 6 - The periodic time decreases as the number of complete oscillations increases?.....
.....
- 7 - The frequency increases as the number of complete oscillations increases?.....
.....
- 8 - The product of frequency and periodic time equals unity?.....
.....
- 9 - Frequency of the vibrating body decreases by increasing the periodic time?.....
.....

8 - What happens when :

- 1 - Increasing the speed of the pendulum? (Concerning its kinetic energy).....
.....
- 2 - The oscillating body passes its rest position (original position) during its movement? (Concerning its velocity and kinetic energy).....
.....
- 3 - The oscillating body reaches the position of its maximum displacement during its movement? (Concerning its velocity and kinetic energy).....
.....

4 – Number of oscillations produced by a vibrating pendulum increases? (Periodic time).

5 – Number of oscillations produced by a body decreases to **half**? (Periodic time).....

6 – Number of oscillations produced by a body decreases to **quarter**? (Periodic time).....

7 – Number of oscillations produced by a vibrating pendulum increases? (Frequency).....

8 – Number of oscillations produced by a body decreases to **half**? (Frequency).....

9 – Number of oscillations produced by a body decreases to **quarter**? (Frequency).....

10 – Number of oscillations produced by a vibrating body increases?(Periodic time and frequency)

11 – The number of complete oscillations equals to the time taken by the vibrating body to make these oscillations?.....

9 – Choose the correct answer :

1 – The movement of **swing** is known as.....

- a. transitional motion
- b. oscillatory motion
- c. wave motion
- d. (a) and (b)

2 – All the following are examples of oscillatory motion, **except**.....

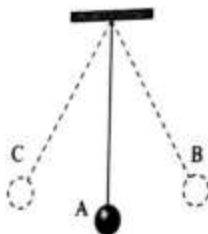
- a. motion of string
- b. motion of tuning fork
- c. motion of car
- d. motion of simple pendulum

3 - The oscillating body moves at the two sides of its rest position, so its velocity.....

- a. decreases when it goes far from its rest position
- b. increases when it goes far from its rest position
- c. will reach its maximum value when it passes its rest position
- d. (a) and (c) together

4 - From the opposite figure :

- a. The maximum **velocity** of the pendulum is at point(s).....
(A - B - C - C,A)
- b. The maximum **kinetic energy** of the pendulum is at point(s).....
(A - B - C - C,B)
- c. The **kinetic energy** of the pendulum **vanishes (equals zero)** at point(s).....
(A - B - C - B,C)



5 - Kinetic energy = $\frac{1}{2} \times$

- a. m/v^2
- b. mv^2
- c. m^2v^2
- d. mv^3

6 - The maximum displacement done by an oscillating body away from its original (rest) position is.....

- a. amplitude
- b. frequency
- c. periodic time
- d. complete oscillation

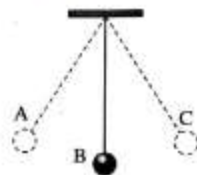
7 - The following figures describe the oscillation of a simple pendulum at different intervals of time. The amplitude of such pendulum =.....



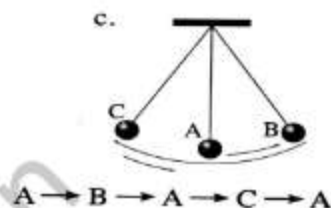
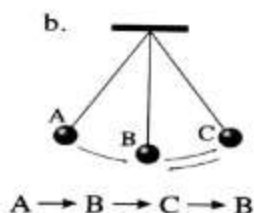
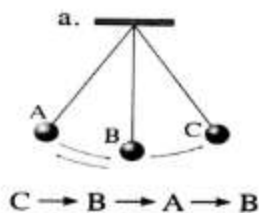
- a. 30 cm
- b. 25 cm
- c. 20 cm
- d. 10 cm

8 – Which of the following represents a complete oscillation for a simple pendulum?...

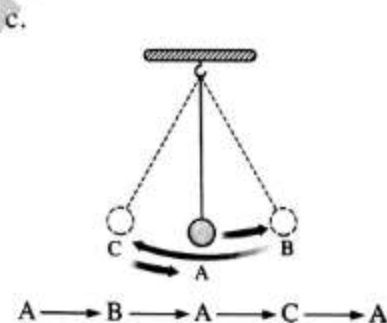
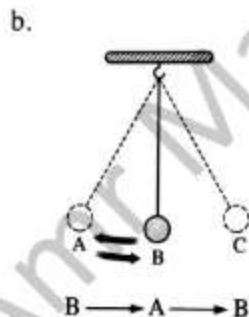
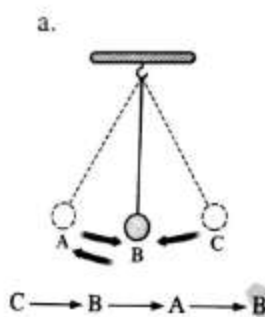
- a. $C \rightarrow B \rightarrow A \rightarrow B$
- b. $A \rightarrow B \rightarrow C \rightarrow B \rightarrow A$
- c. $A \rightarrow B \rightarrow C$
- d. $B \rightarrow C \rightarrow B \rightarrow A$



9 – Which of the following figures represents **a complete oscillation (vibration)**?.....



10 – Which of the following represents **a half complete oscillation (vibration)**?.....



11 – The complete oscillation includes.....**displacements (amplitudes)**

- a. one
- b. 2 successive
- c. 3 successive
- d. 4 successive

12 – The **amplitude** of the simple pendulum is.....of a complete oscillation

- a. four times
- b. quarter
- c. half
- d. double

13 – The periodic time is the time of.....oscillation

- a. $\frac{1}{4}$
- b. $\frac{1}{2}$
- c. $\frac{1}{5}$
- d. one complete

14 - The **ratio** between the **periodic time** of **two** oscillating bodies the **first** makes **9 complete oscillations** in **second** and the **second** makes **3 complete oscillations** in **second** equals.....

a. $1/3$

b. $1/9$

c. 3

d. 12

15 - The **ratio** between the time of amplitude to the time of complete oscillation equals

a. $1 : 2$

b. $2 : 1$

c. $1 : 4$

d. $4 : 1$

16 - If the time of amplitude of an oscillating body is doubled, so the time of complete oscillation increases to

a. double

b. 3 times

c. 4 times

d. 5 times

17 - The number of complete oscillations made by an oscillating body in one second is...

a. amplitude

b. frequency

c. periodic time

d. oscillation

18 - The frequency of the oscillating body is measured in a unit called.....

a. Hertz

b. Watt/m

c. Decibel

d. m/sec

19 - Gigahertz =Kilohertz

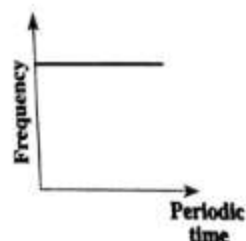
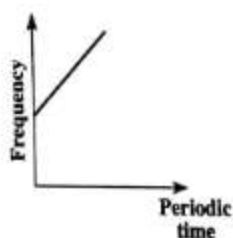
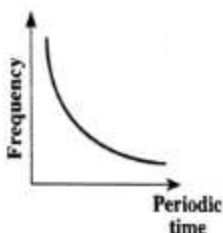
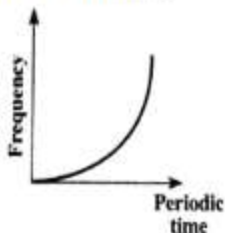
a. 10^2

b. 10^3

c. 10^6

d. 10^9

20 - Which of the following figures represents the **relation** between **frequency** and **periodic time**?.....



10 – Cross the odd word out, then write scientific term :

1 – Pendulum motion – spring motion – rotary bee motion – stretched string motion
.....

II - Put (✓) or (x) then correct the false statement :

- 1 – The oscillatory motion is regularly repeated through equal intervals of time (.....)
- 2 – The motion of tuning fork is a wave motion (.....)
- 3 – The swing is an example of periodic motion (.....)
- 4 – The tuning fork oscillation is an example for the periodic motion (.....)
- 5 – The motion of rotary bee is an oscillatory motion (.....)
- 6 – The velocity of the oscillating body reaches its maximum value when it passes its original position (.....)
- 7 – The kinetic energy of the simple pendulum decreases by increasing its velocity (.....)
- 8 – The simple harmonic motion is a form of oscillatory motion (.....)
- 9 – The amplitude is measured in metre (.....)
- 10 – The complete oscillation consists of two successive displacements (.....)
- 11 – The periodic time is the time of two complete oscillations (.....)
- 12 – The periodic time is the time taken by an oscillating body to make 4 successive displacements away from its rest position (.....)
- 13 – The periodic time is inversely proportional to number of complete oscillations (.....)
- 14 – The time of one amplitude equals $\frac{1}{4}$ the periodic time (.....)
- 15 – The frequency is the number of complete oscillations made by the oscillating body in one minute (.....)
- 16 – The frequency of an oscillating body is measured in seconds (.....)
- 17 – The product of dividing the number of complete oscillation made by an oscillation object over the time taken to makes these oscillations equals its periodic time (.....)

- 18 – Hertz = 1×10^{-3} kilohertz (.....)
- 19 – Hertz = 1×10^6 Megahertz (.....)
- 20 – Hertz = 1×10^8 Gigahertz (.....)
- 21 – Kilohertz = 1×10^{-6} gigahertz (.....)
- 22 – Gigahertz = 1×10^3 megahertz (.....)
- 23 – The oscillating body which its frequency is 50 Hz, it takes 50 sec. to make one complete oscillation (.....)
- 24 – A vibrating body makes $\frac{1}{4}$ complete oscillations in $\frac{1}{64}$ sec. so its frequency equals 6 Hz (.....)
- 25 – The frequency is inversely proportional to number of complete oscillations (.....)
- 26 – The oscillating body of frequency 360 Hz makes 180 complete oscillations in half a minute (.....)
- 27 – The frequency of the oscillating body is the reciprocal of the periodic time (.....)
- 28 – Frequency is directly proportional to the periodic time (.....)
- 29 – The frequency equals the periodic time, when the number of complete oscillations equals the time take to make these oscillations (.....)

12 – When do the following cases happen?

- 1 – The motion of a body is a **periodic** motion?.....
- 2 – The periodic motion is an **oscillatory** motion?.....
- 3 – The velocity of a pendulum reaches its **maximum** value?.....
- 4 – The kinetic energy of a pendulum reaches its **minimum** value?.....
- 5 – The value of the periodic time of a vibrating body **equals** its frequency?.....

13 – Problems :

A – Amplitude and complete oscillation :

1 - If the **maximum displacement** done by the oscillating body away from its original position is 0.5 cm. Find the **total distance** covered to makes 5 **complete oscillations**

2 – Calculate the **amplitude** of a pendulum which covers a **distance** of 80 cm. to make one **complete oscillation**

B – Periodic time (T)

- Written :

1 – Calculate the **periodic time** of a source that makes 600 **oscillations** in 1 **minute**

2 – If the **periodic time** of an oscillating body is 0.2 **seconds**. Find the **time taken** to do 5 **complete oscillations**

3 – If the **periodic time** of an oscillating body is 0.1 **second**. Calculate the **number of complete oscillations** in one **minute**

- Complete :

- 1 - An oscillating body makes 900 oscillations in half minute, its **periodic time** is....
- 2 - If the **periodic time** of an oscillating body is 0.2 seconds, so the **time taken** to do 9 complete oscillations is.....
- 3 - If the **periodic time** of an oscillating body is 0.1 second, so the **number of complete oscillations** in one minute is.....

- Choose :

- 1 - An oscillating body makes 20 oscillations in second, so its **periodic time** = ...sec
- a. 0.05 b. 0.2 c. 0.1 d. 5
- 2 - The **periodic time** of an oscillating body which makes 240 oscillations in one minute equals.....
- a. 1 sec b. $\frac{1}{4}$ sec c. $\frac{1}{2}$ sec d. 4 sec
- 3 - If the **periodic time** of an oscillating body is 0.1 sec. so the **number of complete oscillations** in one minute is.....
- a. 10 b. 120 c. 60 d. 600

C - Time of amplitude

- Written :

- 1 - Find the **time of making amplitude** of a simple pendulum makes 600 complete oscillations in one minute
-
-

- Complete :

- 1 - If the **maximum displacement** done by the oscillating body away from its **rest position** is 0.2 cm which is made in 0.5 second, so its **amplitude** is.....and the **periodic time** is.....

D – Frequency (F)

- Written :

1 – Find the **frequency** in **GHz** of a simple pendulum which makes **720 complete oscillations** in **90 seconds**

.....

.....

2 – Calculate the **number** of **complete oscillations** made by a body in **2 minutes**, if its **frequency** is **6 Hz**

.....

.....

- Complete :

1 – An oscillating body makes **600 complete cycles** per **minute**, its **frequency** is.....

2 – If the **frequency** of an oscillating body equals **6 Hz**, so the **number** of **complete oscillations** in two **minutes** is.....

- Choose :

1 – A pendulum makes **540 complete oscillations** in a **minute**, so its **frequency** is.....

a. 3 Hz

b. 6 Hz

c. 9 Hz

d. 12 Hz

E – Periodic time (T) and frequency (F)

1 – If the **frequency** of an oscillating body is **10 Hz**. Find

a. Its **periodic time**

b. The **time taken** to makes **300 complete oscillations**

c. The **number** of **complete oscillations** made in a **minute**

.....

.....

.....

2 – Simple pendulum makes 1200 **complete oscillations** in a **minute**, where every complete oscillation cuts a **distance 20 cm**. Calculate

- Amplitude**
- Frequency**
- Periodic time**
- The **time of 16 complete oscillations**

13 – Study the following figures, then answer :

1 – Which figure represents the relation between the velocity and the time of an oscillating pendulum, if its **rest position** is symbolized by the letter (A). **Give reason**

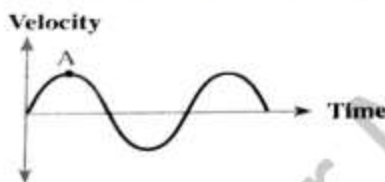


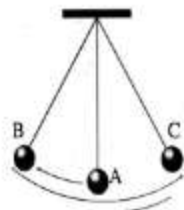
Fig. (1)



Fig. (2)

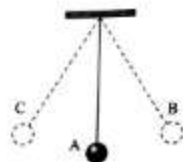
2 – From the opposite figure, complete :

- Point (A) represents.....
- The **distance (AB)** represents.....
- The **motion of simple pendulum** (A → B → C → A) represents.....and the **time of this motion** is called.....



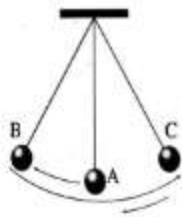
3 – From the opposite figure, complete the following :

- The oscillating body has a **maximum kinetic energy** at point(s)
- The **velocity** of the **pendulum** is **minimum** at point(s).....
- If the **pendulum** takes 0.2 **second** to move from (A) to (B), so its **periodic time** is.....

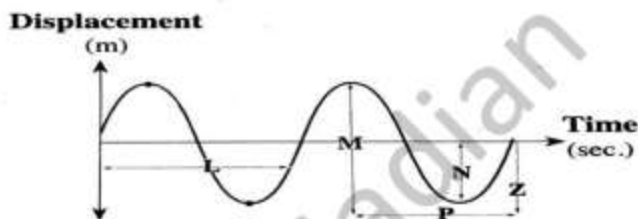


4 – Study the opposite figure, then answer the following questions :

1. **Point (A)** represents.....
2. The **distance (AB)** represents.....and it **equals** the **distance**.....
3. The vibrating body has its **maximum** kinetic energy at point(s)...
4. When the **pendulum** makes 600 **complete oscillations** in two **minutes**, its **frequency** =.....and its **periodic time**=.....



5 – The opposite figure represents an oscillatory motion for a simple pendulum. Choose the letter that denotes :

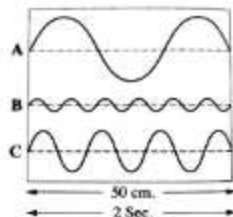


- a. The **oscillation** of the **pendulum** forming $\frac{3}{4}$ **complete oscillation** (.....)
- b. The **amplitude** (.....)

6 – The opposite figure represents three **simple harmonic motions** (A, B and C) :

Which one has :

- a. The largest **frequency** :.....
- b. The largest **amplitude** :.....



7 – The following figures represent the motion of two oscillating bodies :

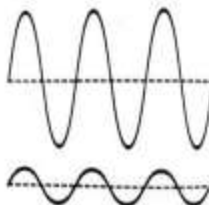
- a. What are the **similarities** between them?

.....

- b. What are the **differences** between them?

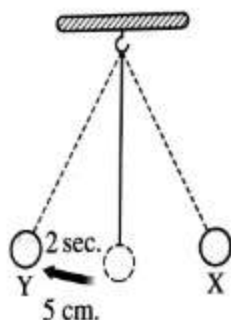
.....

.....



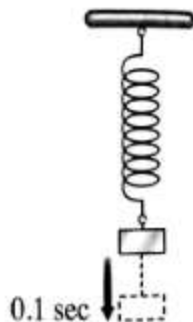
8 – From the opposite figure. Choose the correct answer :

- The **amplitude** of the **pendulum** is.....
 - 0.2 sec
 - 0.4 Hz
 - 3 cm
 - 5 cm
- The **distance** covered in a **complete oscillation** is.....
 - 0.2 sec
 - 0.4 Hz
 - 20 cm
 - 5 cm
- The **periodic time** equals.....
 - 2 sec
 - 8 sec
 - 6 sec
 - 3 cm
- The **frequency** equals.....
 - 0.2 sec
 - 0.4 Hz
 - 1/8 cycles/sec
 - 0.4 m



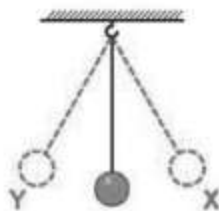
9 – In the opposite figure, if the maximum displacement done by the spring away from its rest point is **3 cm**. Using the figure calculate :

- The **amplitude** of this spring equals.....
 - 1 cm
 - 3 cm
 - 12 cm
 - 8
- The **vertical distance** covered by the spring through **3 complete oscillations** equals.....cm
 - 3
 - 12
 - 24
 - 36
- The **frequency** of the spring equals.....Hz
 - 0.2
 - 0.4
 - 2.5
 - 5



10 – In the opposite figure, when the ball of pendulum moves from (X) to (Y) in a duration of 0.02 sec, the **periodic time** equals.....sec and the **frequency** time.....Hz (choose 2 answers)

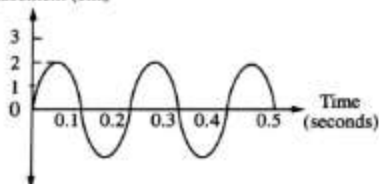
- 0.04
- 0.02
- 25
- 50



11 – From the opposite figure, calculate :

- Amplitude :
- Number of complete oscillations :
- Periodic time :
- Frequency :

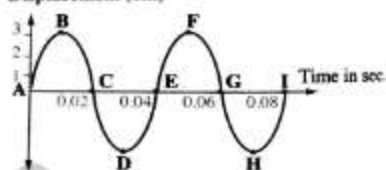
Displacement (cm.)



12 – The opposite figure represents an oscillatory motion. Find

- Amplitude :
- Number of complete oscillations :
- Periodic time :
- Frequency :

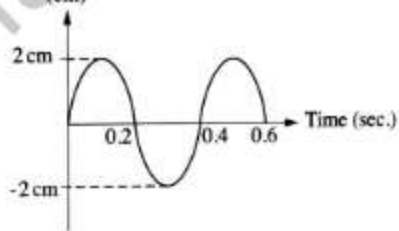
Displacement (cm)



13 – From the opposite figure, choose the correct answer :

- The **periodic time** =
[0.2 sec – 0.4 sec – 0.6 sec – 0.4 m]
- Frequency** =
[0.2 sec – 0.4 Hz – 2 cm – 0.4 cm]
- The **amplitude** =
[0.2 sec – 0.4 sec – 2 cm – 0.4 cm]

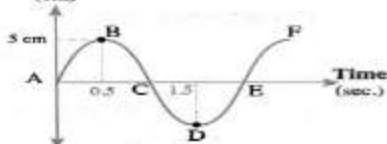
Displacement (cm)



14 – The opposite figure represents the oscillatory motion of a spring. Answer

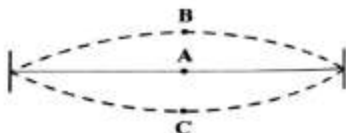
- The **complete oscillation** is represented between the points.....
- The **amplitude**:
- The **periodic time** :
- The **time of an amplitude** :
- The **frequency** :

Displacements (cm)



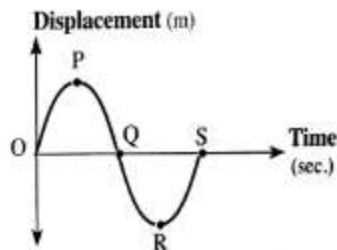
15 – In the opposite figure, if the wire transfers from A to B in 5 sec. So its **frequency** is....

- 5 Hz
- 5×10^{-3} Megahertz
- 5×10^{-9} Gigahertz
- 5×10^{-5} Kiloherztz



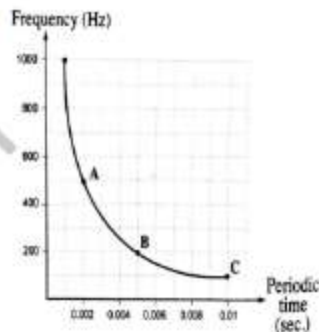
16 – The opposite figure represents the motion of an oscillating body, its frequency is 50 Hz, so the **periodic time** which it takes between the point (P) and (Q) equals.....

- a. 0.02 sec c. 0.05 sec
b. 0.01 sec d. 0.005 sec



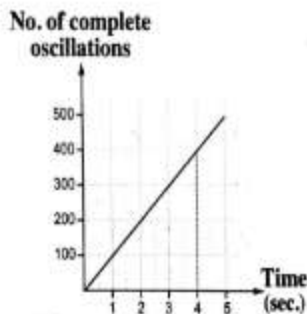
17 – From the opposite graph, answer the following questions :

- a. Determine the **number of complete oscillations** which made by (A), (B) and (C) in **one second**
- b. Determine the **periodic time** of the oscillating body (B)
- c. What is the **type of relation** between the frequency and the periodic time?.....



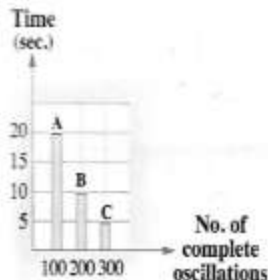
18 – From the opposite graph. Find the following :

1. The **number of complete oscillations** made by the oscillating body after 4 **seconds**. (.....)
2. The **time** in which the oscillating body makes 200 **oscillations** (.....)
3. The **frequency** of the oscillating body (.....)
4. The **periodic time** (.....)



19 – The opposite figure indicates the oscillatory motion of **three bodies** (A), (B) and (C)

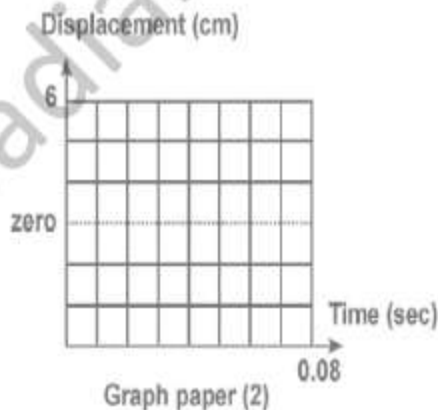
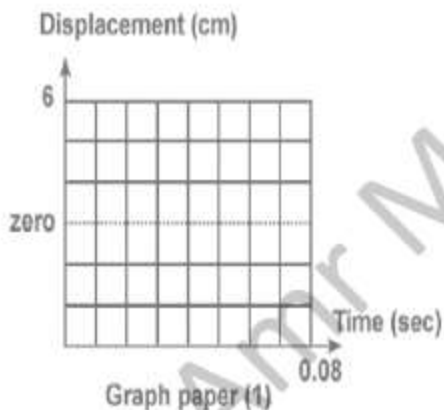
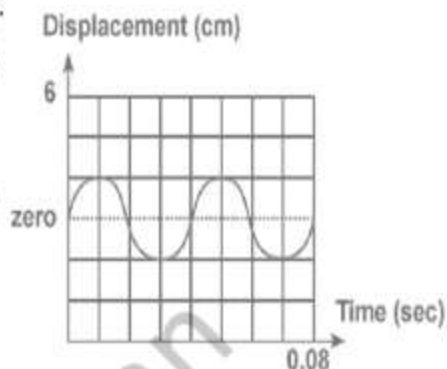
- a. Which of these bodies have a **very high frequency**?
.....
.....
- b. What is the **value of the periodic time** of the body (B)?
.....
.....



15 – Answer the following questions :

The opposite figure represents the motion of an oscillating body. Using the figure;

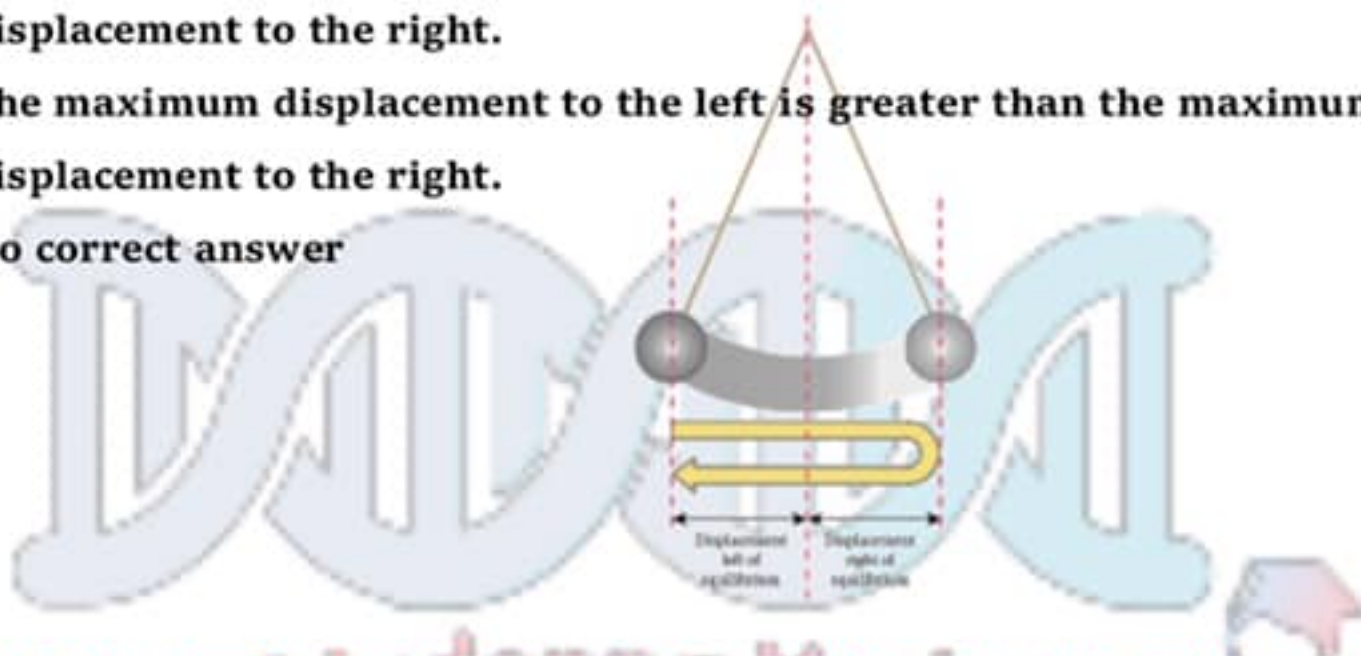
- (a) Find the periodic time of the oscillating body.
- (b) Redraw the figure in graph paper 1, showing double of the frequency and the same amplitude.
- (c) Redraw the figure in graph paper 2, showing the same frequency and double of the amplitude.



THANK YOU

1- A pendulum swings from left to right and back again. The pendulum oscillates without dissipating energy. How does the maximum displacement left of the equilibrium position compare to the maximum displacement right of the equilibrium position?

- a- The maximum displacement to the left is the same distance as the maximum displacement to the right.
- b- The maximum displacement to the left is less than the maximum displacement to the right.
- c- The maximum displacement to the left is greater than the maximum displacement to the right.
- d- No correct answer



2-What is the term for the distance of an oscillating object from the equilibrium position?

- a- Period
- b- Wavelength
- c- Oscillation
- d- Displacement

3- A pendulum swings from left to right and back again. Which of the following is the number of oscillations that the pendulum must complete to be in oscillatory motion?

- a- Any number greater than zero
- b- A half
- c- Two
- d- Any number greater than zero and not greater than one



4-A pendulum swings from left to right and back again. The pendulum oscillates without dissipating energy. At which of the following positions is the speed of the pendulum greatest?

- a- ..
- b- ...
- c-
- d- No correct answer



5- A pendulum swings from left to right and back again. The pendulum oscillates without dissipating energy. How does the time taken to swing the maximum distance left of the equilibrium position compare to the time taken to swing the maximum distance right of the equilibrium position?

- a- The time taken to swing the maximum distance left is the same as the time taken to swing the maximum distance right.
- b- The time taken to swing the maximum distance left is less than the time taken to swing the maximum distance right.
- c- The time taken to swing the maximum distance left is greater than the time taken to swing the maximum distance right.
- d- No correct answer



6- A pendulum swings from left to right and back again. Which of the following diagrams shows the pendulum at its equilibrium position?

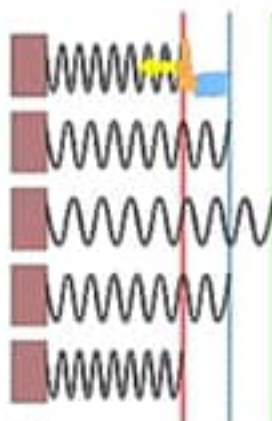
- a- —
- b- —
- c- —
- d- No correct answer



7-A spring attached to a wall is pushed until it reaches the red line, and then it is released. The diagrams show how the length of the spring changes after it is released. The spring oscillates without dissipating energy. The blue line shows the equilibrium position of the spring. How does the distance between

the red and blue lines compare to the distance between the green and blue lines?

- a- The distance between the red and blue lines is less than the distance between the green and blue lines.
- b- The distance between the red and blue lines is greater than the distance between the green and blue lines.
- c- The distances are the same.
- d- No correct answer



8-A spring attached to a wall is pushed until it reaches the red line, and then it is released. The diagram shows how the length of the spring changes after it is released. The blue line is halfway between the red and green lines. Which color line shows the equilibrium position of the spring?

- a- Blue
- b- Green
- c- Red
- d- No correct answer



9- An object has a period of 4 s. The object oscillates for 48 s. How many oscillations does the object complete?

- a- 4 oscillations
- b- 8 oscillations
- c- 10 oscillations
- d- 12 oscillations

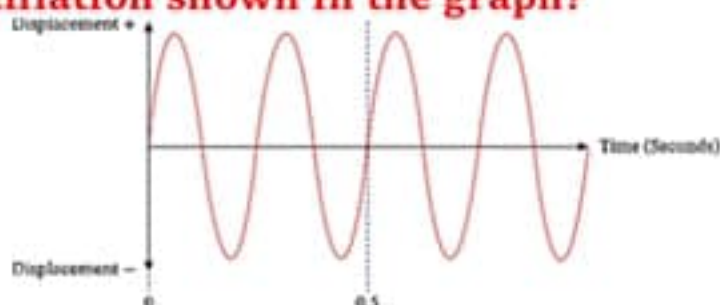
10- A pendulum starts with its bob at its greatest height. The bob swings away from and back to its starting position. The frequency of the pendulum is 1.5 Hz. How many times does the bob swing from its starting position and back again in a time of 6 s?

- a- 9 times
- b- 10 times
- c- 4 times
- d- 12 times



11- What is the frequency of the oscillation shown in the graph?

- a- 2 Hz
- b- 8 Hz
- c- 4 Hz
- d- 10 Hz



12- An oscillation has a frequency of 2 Hz. What is the frequency of the oscillation multiplied by the period of the oscillation?

- a- 1
- b- 2
- c- 3
- d- 4

13- An object has a frequency of 4 Hz. How many oscillations will the object complete in 25 s?

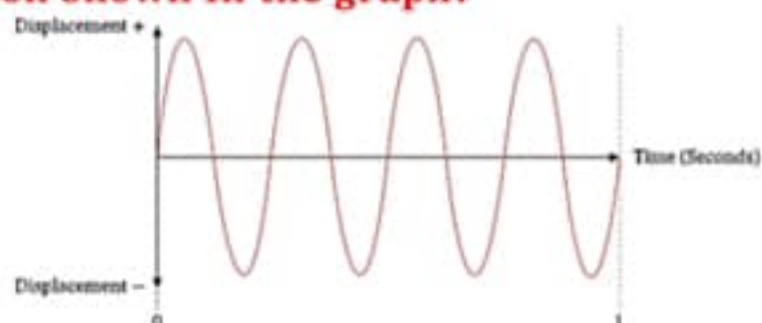
- a- 25 oscillations
- b- 50 oscillations
- c- 80 oscillations
- d- 100 oscillations

14- Which of the following is a unit of frequency?

- a- Hertz per second
- b- Meters per second
- c- Hertz
- d- Meters

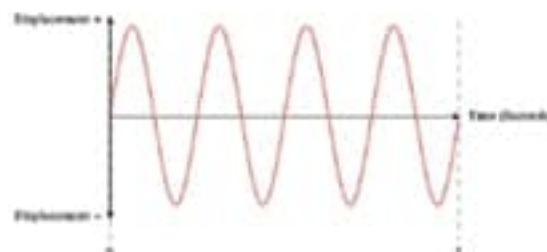
15- What is the frequency of the oscillation shown in the graph?

- a- 8 Hz
- b- 1 Hz
- c- 4 Hz
- d- No correct answer



16- What is the frequency of the oscillation shown in the graph?

- a- 2 Hz
- b- 3 Hz
- c- 4 Hz
- d- 5 Hz



17- An oscillation has a frequency of 10 Hz. What is the period of this oscillation?

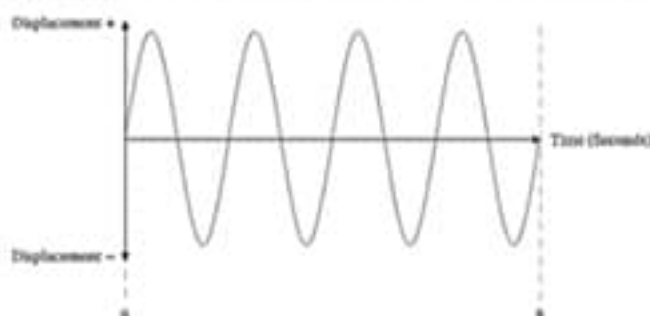
- a- 1 s
- b- 0.1 s
- c- 10 s
- d- No correct answer

18- The diagram shows an oscillating string held between two poles. Is the wave on the string longitudinal or transverse?

- a- Transverse
- b- Longitudinal
- c- a and b
- d- no correct answer



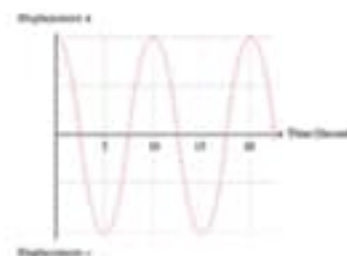
19- What is the frequency of the oscillation shown in the graph?



- a- 8 Hz
- b- 4 Hz
- c- 0.1 Hz
- d- 0.5 Hz

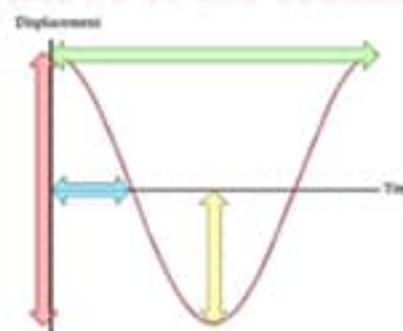
20- Which of the following is the period of the oscillation shown in the graph?

- a- 5 seconds
- b- 2.5 seconds
- c- 22.5 seconds
- d- 10 seconds



21- Which color arrow correctly represents the amplitude of the oscillation shown in the graph?

- a- Red
- b- Yellow
- c- Blue
- d- Green



22- The amplitude of an oscillation is the size of the maximum___ of the oscillation.

- a- period
- b- displacement
- c- length
- d- frequency

23- If the period of an oscillation increases, how must the frequency of the oscillation change?

- a- The frequency must increase.
- b- The frequency must decrease.
- c- The frequency not changed
- d- No correct answer

24- If the frequency of an oscillation decreases, how must the period of the oscillation change?

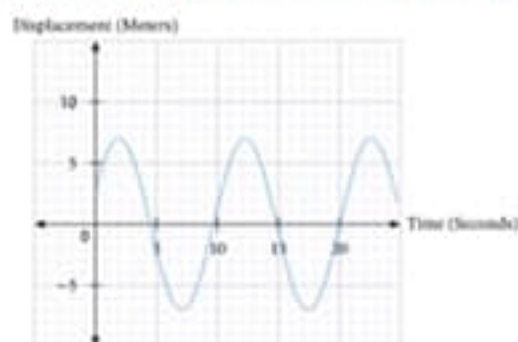
- a- The period must increase.
- b- The period must decrease.
- c- The period not changed
- d- No correct answer

25- If the period of an oscillation decreases, how must the frequency of the oscillation change?

- a- The frequency increases.
- b- The frequency decreases.
- c- The frequency not changed
- d- No correct answer

26- Which of the following is the amplitude of the oscillation shown in the graph?

- a- 14 meters
- b- 7 meters
- c- 6 meters
- d- 20 meters



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